D-EG5/EG5CK/EG7

SERVICE MANUAL

Ver 1.0 1999.04

US Model
D-EG7
Canadian Model
D-EG5/EG5CK/EG7
AEP Model
UK Model
E Model
Australian Model
D-EG7

Photo : D-EG7

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM-2911AAA
Optical Pick-up Type	DAX-11A2

SPECIFICATIONS

System
Compact disc digital audio system

Laser diode properties
Material: GaAlAs
Wavelength: λ = 780 nm
Emission duration: Continuous
Laser output: Less than 44.6 μW
(This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

D-A conversion
1-bit quartz time-axis control

Frequency response
20 - 20,000 Hz $^{+1}_{-2}$ dB (measured by EIAJ CP-307)

Output (at 4.5 V input level)
Headphones (stereo minijack)
Approx.15 mW + Approx. 15 mW at 16 ohms
(Approx. 3 mW + Approx. 3 mW at 16 ohms)*
*For the customers in France

Power requirements
For the area code of the model you purchased, check the upper left side of the bar code on the package.
- Two Sony NC-AA rechargeable batteries: 2.4 V DC
  Two Sony NH-MDAA rechargeable batteries: 2.4 V DC
- Two LR6 (size AA) batteries: 3 V DC
- AC power adaptor (DC IN 4.5 V jack):
  US, Canadian model: 120 V, 60 Hz
  AEP, French, German, East European, E13 model:220 - 230 V, 50/60 Hz
  UK model: 230 - 240 V, 50 Hz
  Australian model: 240 V, 50 Hz
- Sony DCC-E245 car battery cord for use on car battery: 4.5 V DC

Battery life* (approx. hours)
(When you use the CD player on a flat and stable surface.)
Playing time varies depending on how the CD player is used.

When using	ESP function off	ESP function on
Two rechargeable batteries NC-AA (charged for about 3 hours**)	4.5	4.0
Two rechargeable batteries NH-MDAA (charged for about 4 hours**)	8.5	8.0
Two Sony alkaline batteries LR6SG	14	14

* Measured value by the standard of EIAJ (Electronic Industries Association of Japan).
** Charging time varies depending on how the rechargeable battery is used.

Operating temperature
5°C - 35°C (41°F - 95°F)

Dimensions (w/h/d) (excluding projecting parts and controls)
Approx. 146.0 × 30.7 × 157.4 mm
(5 ¾ × 1 ¼ × 6 ¼ in.)

Mass (excluding rechargeable batteries)
Approx. 310 g (11 oz)

– Continued on page 2 –

PORTABLE CD PLAYER

MICROFILM

SONY®

Supplied accessories

For the area code of the location in which you purchased the CD player, check the upper left side of the bar code on the package.

	D-EG5	D-EG5CK	D-EG7
AC power adaptor (1)	O	O	O
Headphones (1)	O	O	O
Rechargeable batteries (2)	–	–	O*
Battery carrying case (1)	–	–	O*
Carry strap (1)	–	–	O
Hand strap (1)	O	O	–
AC plug adaptor (1)	–	–	O*
Car battery cord (1)	–	O	–
Car connecting pack (1)	–	O	–
Velcro tape (2)	–	O	–
Spare fuse (1)	–	O	–
Spiral tube (1)	–	O	–

* Supplied with E13 model only

For US customers

The AC power adaptor supplied is not intended to be serviced. Should the AC power adaptor cease to function in its intended manner, during the warranty period, the adaptor should be returned to your nearest Sony Service Center or Sony Authorized Repair Center for replacement, or after warranty period, it should be discarded.

Design and specifications are subject to change without notice.

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DANGER

Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

Before Replacing the Optical pick-up Block

Please be sure to check thoroughly the parameters as per the "Optical pick-up Block Checking Procedure" (Part No. : 9-960-027-11) issued separately before replacing the optical Pick-up block.
Note and specifications required to check are given below.

- FOK output : IC501 ⑫ pin
  When checking FOK, remove the lead wire to disc motor.
- S curve P-to-P value : 0.9 – 1.5Vp-p IC501 ㉛ pin. (Connect pin ⑫ of IC501 (TP880) and ③ of IC501 (GND) with a jumper wire).
  When checking S curve P-to-P value, remove the lead wire to disc motor.
- Adjusted part for focus gain adjustment : RV503
- RF signal P-to-P value : 0.8 – 1.2Vp-p
- Traverse signal P-to-P value : 1.0 – 2.4Vp-p
- The repairing grating holder is impossible.
- Adjusted part for tracking gain adjustment : RV502

Laser Diode Checking Methods

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper panel is closed while turning ON the S801 (push switch type).
The following two checking methods for the laser diode are operable.

Method-1 (In the service mode or normal operation) : Emission of the laser diode is visually checked.

1. Open the upper lid.
2. Push the S801 as shown in Fig. 1-1 .
3. Check the object lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up. During normal operation, the laser diode is turned ON about 2.5 seconds for focus searching.

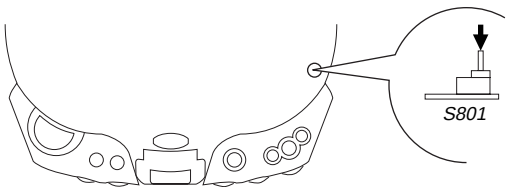
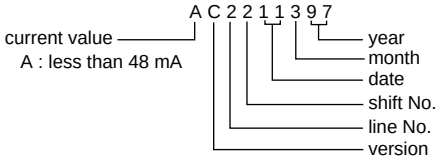


Fig. 1-1 Method to push S801

Method-2 (In the service mode or normal operation) : Check the value of current flowing in the laser diode.

1. Remove the upper panel.
2. Read the current printed on the rear side of the optical pick-up.
   (Print on the rear side of the optical pick-up)



3. Connect a digital voltmeter as shown in Fig. 1-2
4. Press the ▶II key.
5. Calculate the current value by the reading of the digital voltmeter.
   Reading of the tester (V) ÷ 4.7 (Ω) = current value (A)
   (Example) Reading of the digital voltmeter of 0.2256 V :
   0.2256 V ÷ 4.7 Ω = 0.048 (A) = 48 mA
6. Check that the current value is within the following range.
   - Current value of the label $^{+5}_{-11}$ mA(25°C)
     Variation by temperature : 0.4mA / °C
     Current increases with temperature increased.
     Current decreases with temperature decreased.

   If the current is more than the range above, there is a trouble in the automatic power control circuit or the laser diode is in deterioration. If less than the range, a trouble exists in the automatic power control circuit or the optical pick-up.

[MAIN BOARD] (Side B)

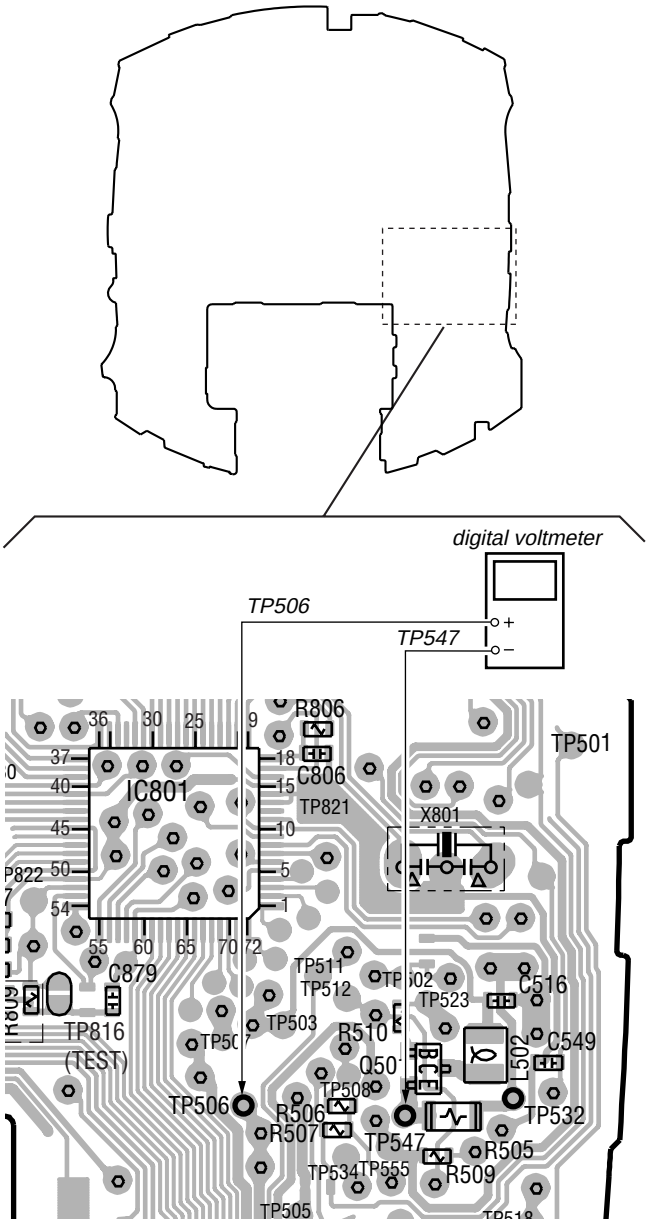
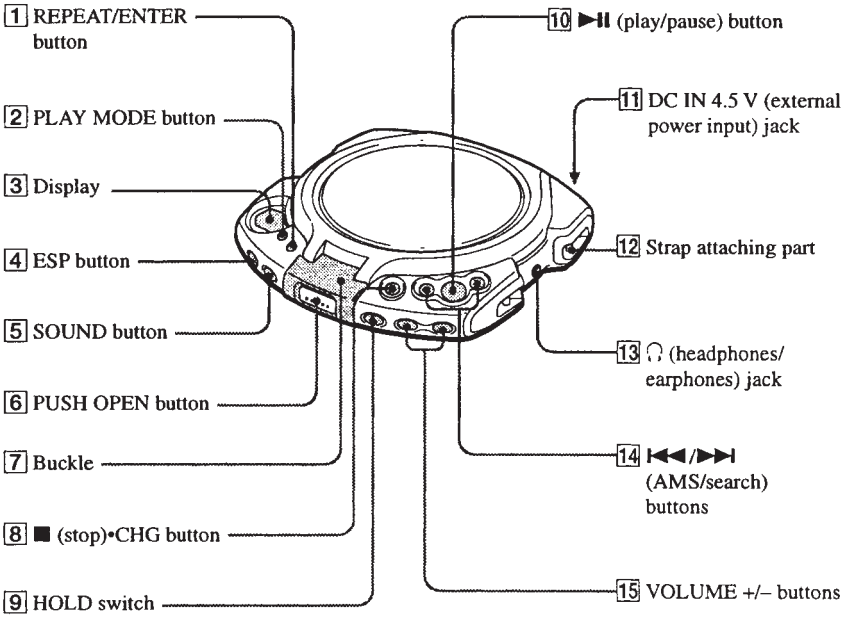


Fig. 1-2 Digital Voltmeter Connecting Location

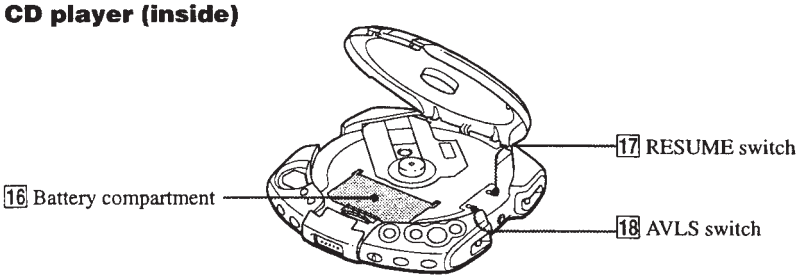
This section is extracted from instruction manual.

Locating the Controls

CD player (front)



CD player (inside)



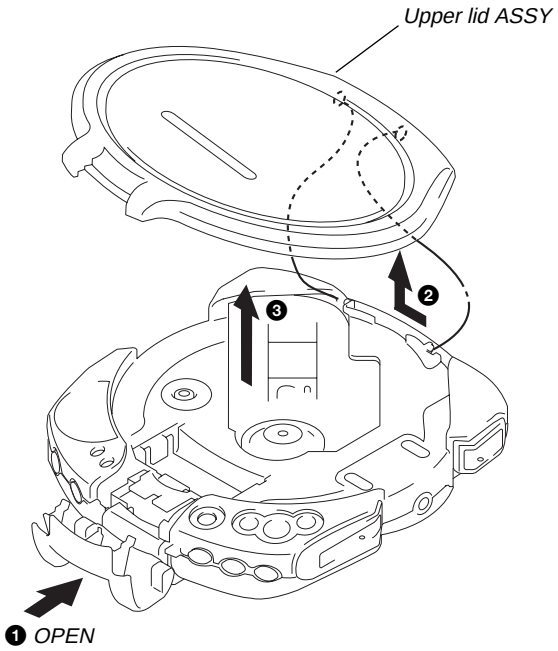
SECTION 3
DISASSEMBLY

● The equipment can be removed using the following procedure.

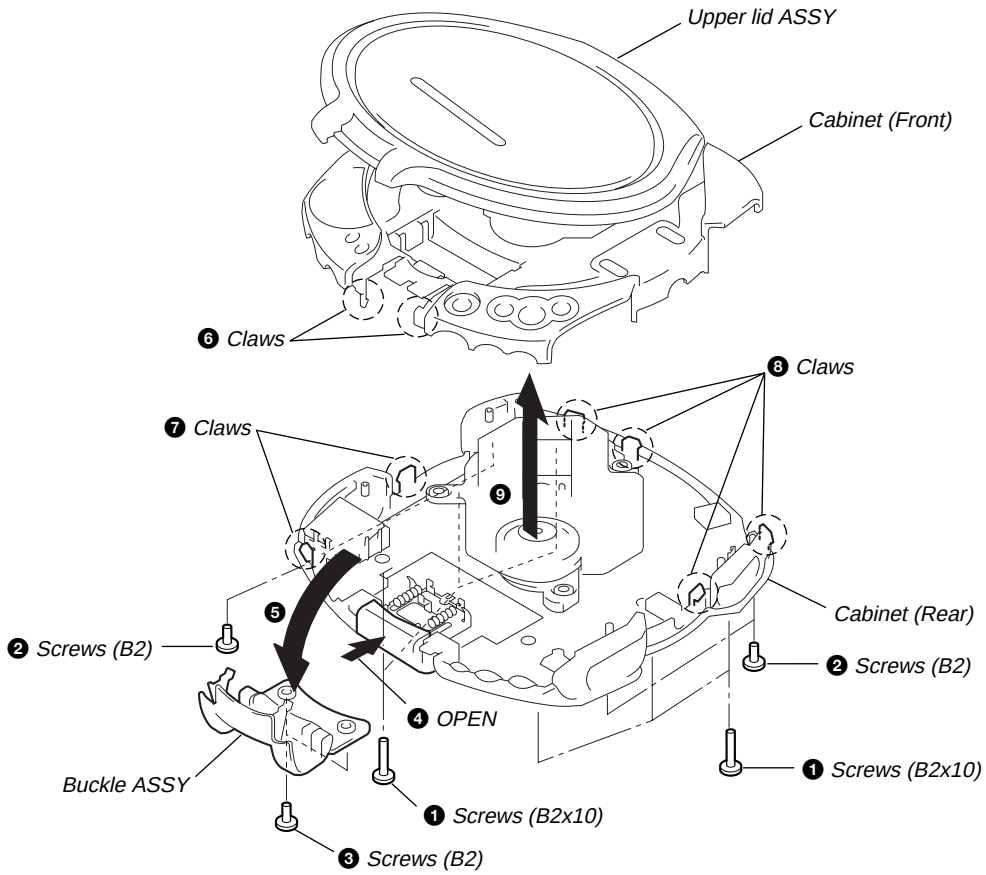
Set → Upper Lid ASSY
Set → Cabinet (Front)
Set → Cabinet (Rear) → MD ASSY → Spindle motor (M902), Optical Pick-up, Sled motor (M901)
MD ASSY → Main board

Note : Follow the disassembly procedure in the numerical order given.

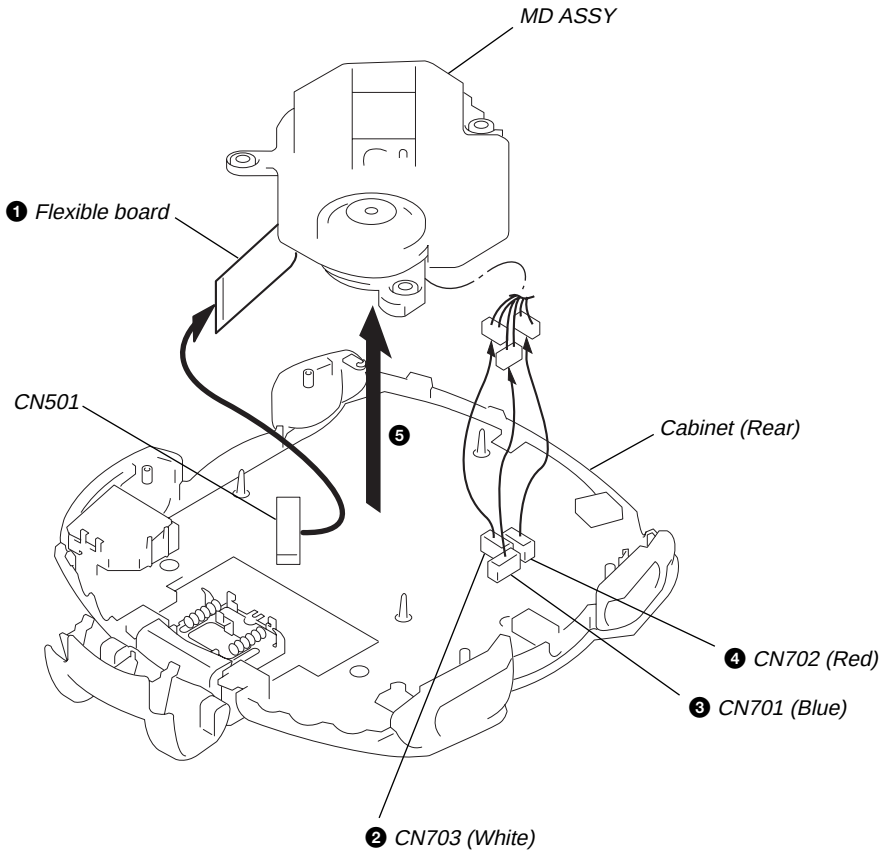
3-1. UPPER LID ASSY



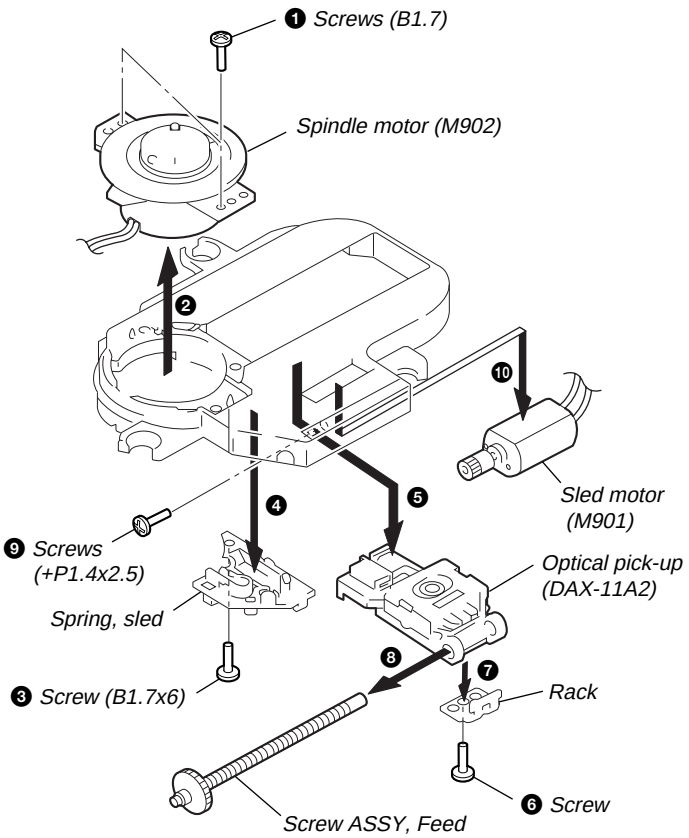
3-2. CABINET (FRONT), CABINET (REAR)



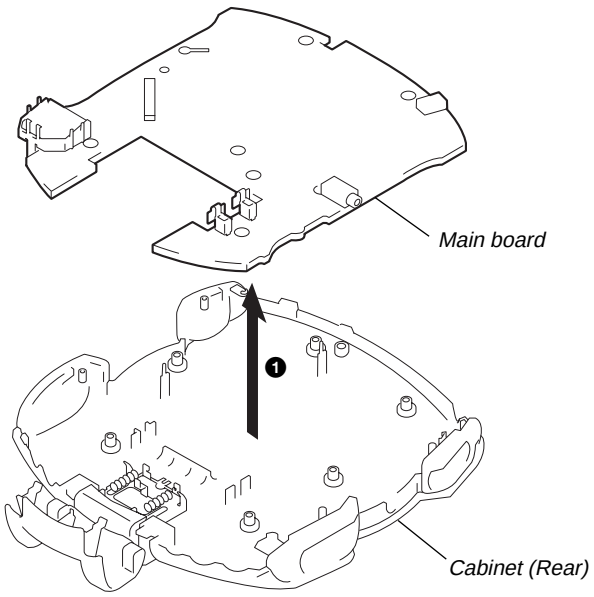
3-3. MD ASSY



3-4. SPINDLE MOTOR (M902), OPTICAL PICK-UP, SLED MOTOR (M901)



3-5. MAIN BOARD



SECTION 4
SERVICE MODE

Service Mode (service program)

The equipment is provided with a service program built in the microcomputer, like conventional models.
Service program operation methods are described in the following.

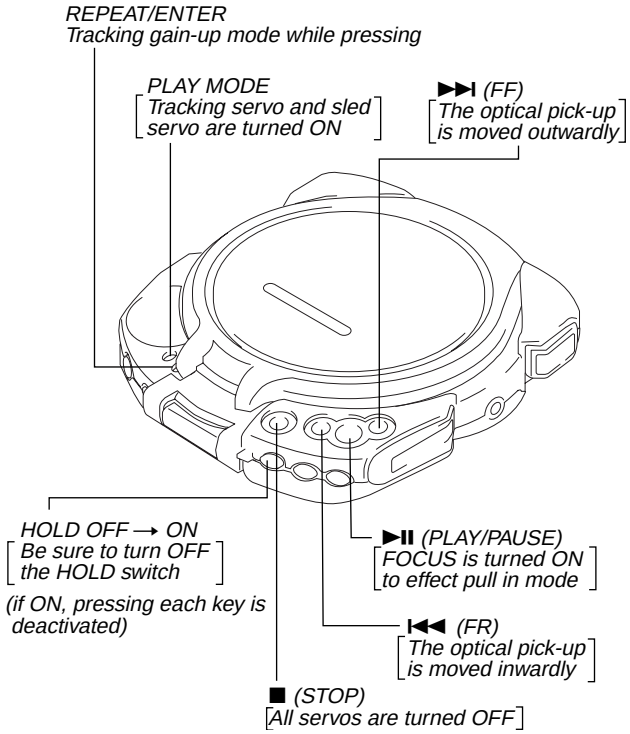

REPEAT/ENTER
Tracking gain-up mode while pressing
PLAY MODE
Tracking servo and sled servo are turned ON
▶▶I (FF)
The optical pick-up is moved outwardly
HOLD OFF → ON
Be sure to turn OFF the HOLD switch
(if ON, pressing each key is deactivated)
▶II (PLAY/PAUSE)
FOCUS is turned ON to effect pull in mode
I◀◀ (FR)
The optical pick-up is moved inwardly
■ (STOP)
All servos are turned OFF

Fig. 4-1 Layout of each key

• Step 1 (Service mode setting method)

1. Turn OFF the HOLD switch the external power supply disconnected (power is not applied to the set).
2. Solder across the TP816 (TEST) terminals (pin ㊷ , IC801 (TEST) is grounded).
3. Connect an external power supply.
   Thus, the set is switched to the service mode.

• Step 2 (Operation in the service mode)

1. Once the service mode is effected, the LCD displays 5 indications each of which is repeatedly displayed.
   However, the following operations can be activated even if LCD indication is effected.
2. By pressing the ▶▶I or I◀◀ key, the optical pick-up movable inwardly or outwardly. However, if this is activated, tracking servo and sled servo are turned OFF, so it can be turned ON by pressing the PLAY MODE key, if required.
3. By pressing the REPEAT/ENTER key, the tracking gain-up mode becomes active.
4. By pressing the ▶II key, focus is turned ON from focus searching while entering CLV-S (pull-in mode).
   Without disc, focus searching is repeated continuously.
5. By pressing the PLAY MODE key, tracking servo, sled servo and CLV-A (servo in PLAY) are turned ON.
6. When 4. and 5. are performed, playing begins. No muting is ON in the service mode.
7. By pressing the ■ key, all servos (focus tracking and sled) are turned OFF. However, the disc motor revolves for a while by inertia.

• Step 3 (Resetting service mode)

1. Be sure to disconnect the external power supply and remove the solder bridge at the TEST terminals connected in setting.
2. The set thus becomes available for normal operation.

– MAIN BOARD – (Side B)

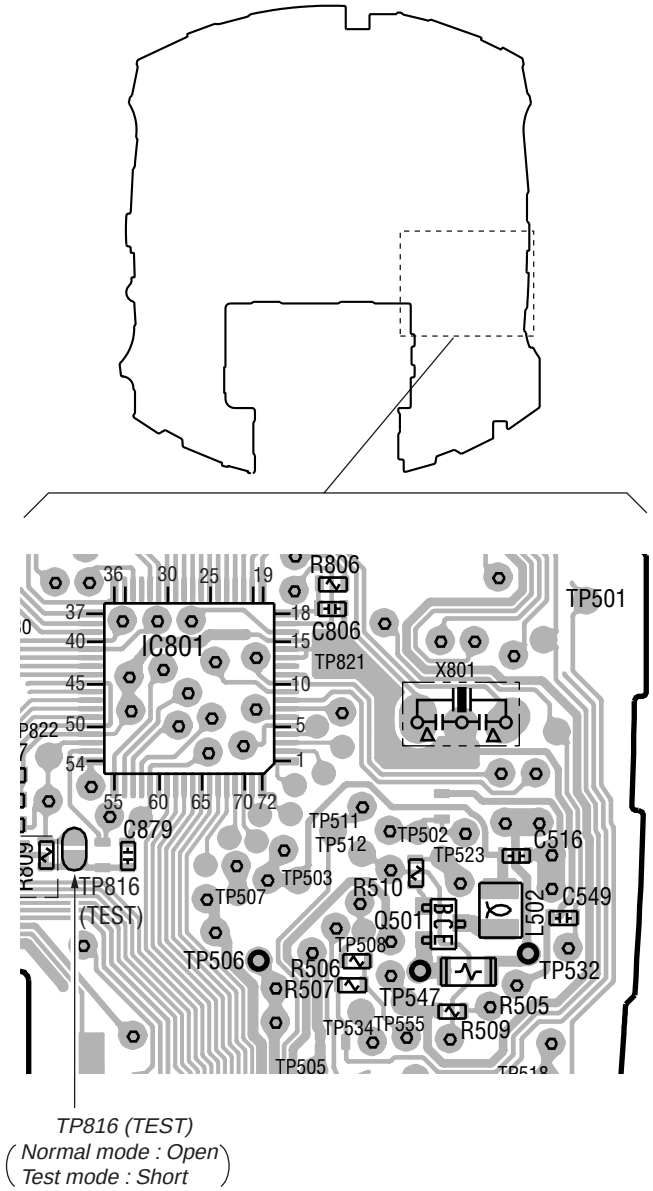


Fig. 4-2 Location of test terminal

SECTION 5
ADJUSTMENTS

CD SECTION

Precautions for Adjustment

1. Before beginning adjustment, set the equipment to service mode. After the completion of adjustment, be sure to reset the service mode.
   For more information, see "Service Mode (service program)" on page 7.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18. Part No. 3-702-101-01) unless otherwise indicated.
4. Power supply voltage requirement : DC 4.5 V
   HOLD switch : OFF
   VOLUME : Minimum
   SOUND switch : NORM
   AVLS switch : OFF

Before Beginning Adjustment

Set the equipment to service mode (See page 7) and check the following.
If there in an error, repair the equipment.

• Checking of the sled motor

1. Open the upper panel.
2. Press the ▶▶I and I◀◀ keys and check that the optical pick-up can move smoothly without sluggishness or abnormal noise in innermost periphery → outermost periphery → innermost periphery.
   ▶▶I : The optical pick-up moves outwardly
   I◀◀ : The optical pick-up moves inwardly

• Checking of focus searching

1. Open the upper panel.
2. Press the ▶II key. (Focus searching operation is activated continuously).
3. Check the object lens of the optical pick-up for smooth up/down motion without sluggishness or abnormal noise.
4. Press the ■ key.
   Check that focus searching operation is deactivated. If not, again press the ■ key slightly longer.

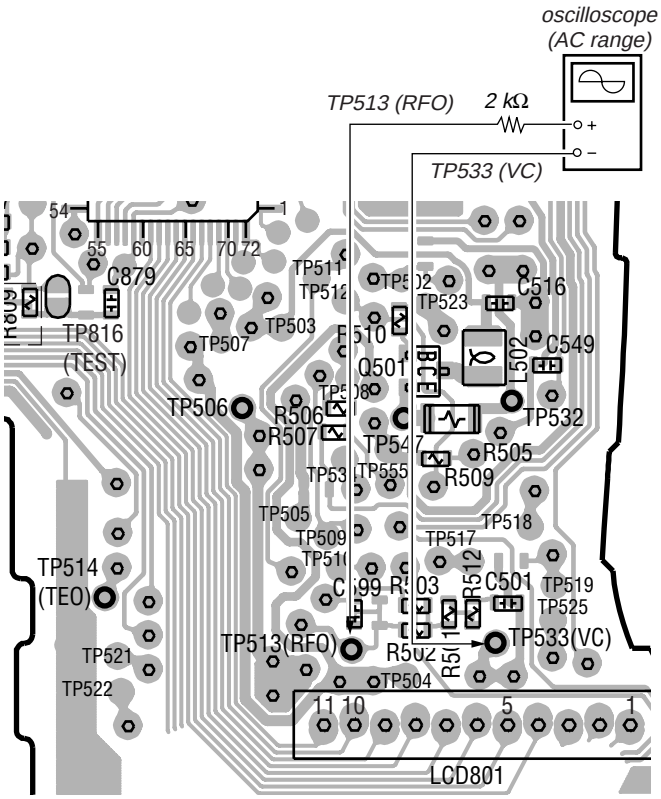
Focus Bias Check

Condition :

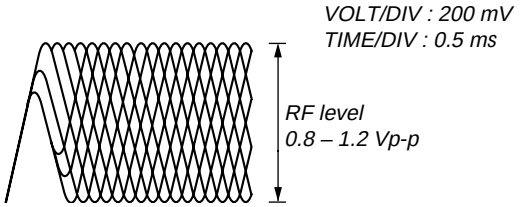
• Hold the set in horizontal state.

Procedure :

[MAIN BOARD] (Side B)



1. Set the equipment to service mode stop state (See page 7).
2. Connect the oscilloscope between TP513 (RFO) and TP533 (VC) on the MAIN board.
3. Move the optical pick-up by Pressing the ▶▶I and I◀◀ keys.
4 Put the disc (YEDS-18).
5. Press the ▶II key.
   (From focus searching, focus is turned ON while entering CLV drawing-in mode. Tracking and sled are turned OFF.)
6. Press the PLAY MODE key. (Both tracking and sled are turned ON).
7. Check the oscilloscope waveform is as shown below.
   A good eye pattern means that the diamond shape (◊) in the center of the waveform can be clearly distinguished.



• RF Signal Reference Waveform (eye pattern)
  To watch the eye pattern, set the oscilloscope to AC range and increase the vertical sensitivity of the oscilloscope for easy watching.

8. Stop removing of the motor by pressing the ■ key.
9. After the completion of adjustment, reset service mode. (See page 7)

Focus/Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up relative to mechanical noise and mechanical shock when the 2-axis device operate. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

This adjustment has to be performed upon replacing any of the following parts :

- Optical pick-up
- RV503 (Focus gain)
- RV502 (Tracking gain)

Normally, be sure not to move RV503 (focus gain) and RV502 (tracking gain).

– Focus Gain Adjustment –

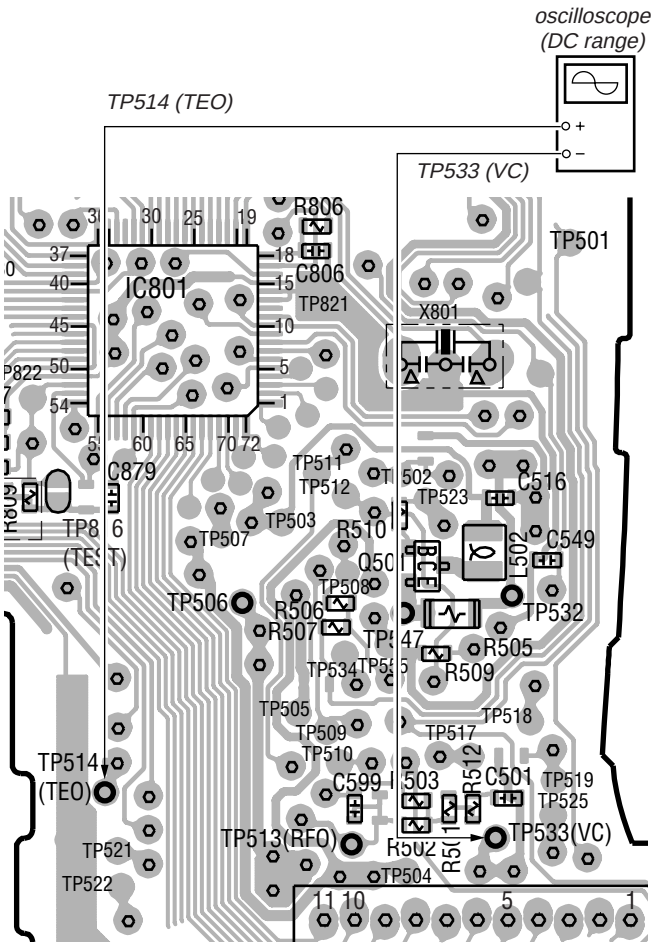
Procedure :

This adjustment is not performed. If focus gain RV503 is turned, set to mechanical center

– Tracking Gain Adjustment –

(perform at normal operation)

[MAIN BOARD] (Side B)



1. Place the optical pick-up level, horizontally. (If the optical pick-up is not level, the 2-axis device will be weighted and adjustment cannot be done.)
2. Connect the oscilloscope between TP514 (TEO) and TP533 (VC) on the MAIN board.
3. Set the disc (YEDS-18) and Press the ▶II (▶▶I) key.
4. Turn RV502 slightly clockwise (tracking gain drops) and obtain a waveform with a fundamental wave (waveform has large waves) as in Figure 5-1 .
5. Turn RV502 slowly counterclockwise (tracking gain rises) until the fundamental wave disappears (no large waves) as in Figure 5-2.
6. Set RV502 to the position about 30 °counterclockwise from the position obtained in step 5. If RV502 contact point is more than 90 ° counterclockwise from mechanical center, tracking gain is too high. In this case, readjust from step 4.
7. Press ▶II (▶▶I) or I◀◀ keys and observe the 100 track jump waveform. Check that no traverse waveform appears for both ▶II (▶▶I) or I◀◀ directions. (See Figures 5-3 and 5-4.) It is acceptable if the traverse waveform appears only now and then, but if it appears constantly raise tracking gain slightly and check step 7 again.
8. Check that there is no abnormal amount of operation noise (white noise) from the 2-axis device. If there is, tracking gain is too high, readjust starting with step 4.

The waveforms are those measured with the oscilloscope set as shown below.

- VOLT/DIV : 50mV
- TIME/DIV : 5mS
- Waveform when tracking gain lowered.
  Fundamental wave appears (large waves).

Fig. 5-1

- Waveform when fundamental wave disappears (no large waves).

Fig. 5-2

- Waveform when no traverse waveform during 100 track jump. (Brake application is smooth because of adjustment.)

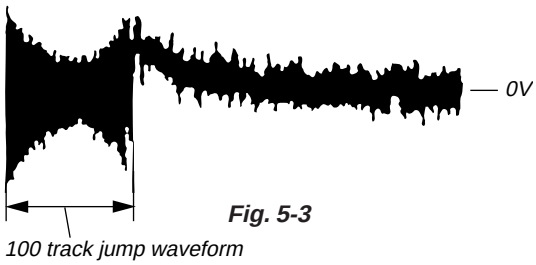


Fig. 5-3

- Waveform when no traverse waveform during 100 track jump. (Brake application is poor because of adjustment.)

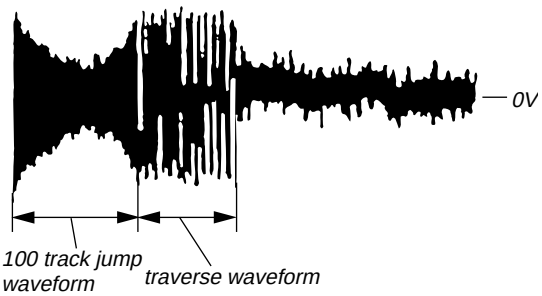
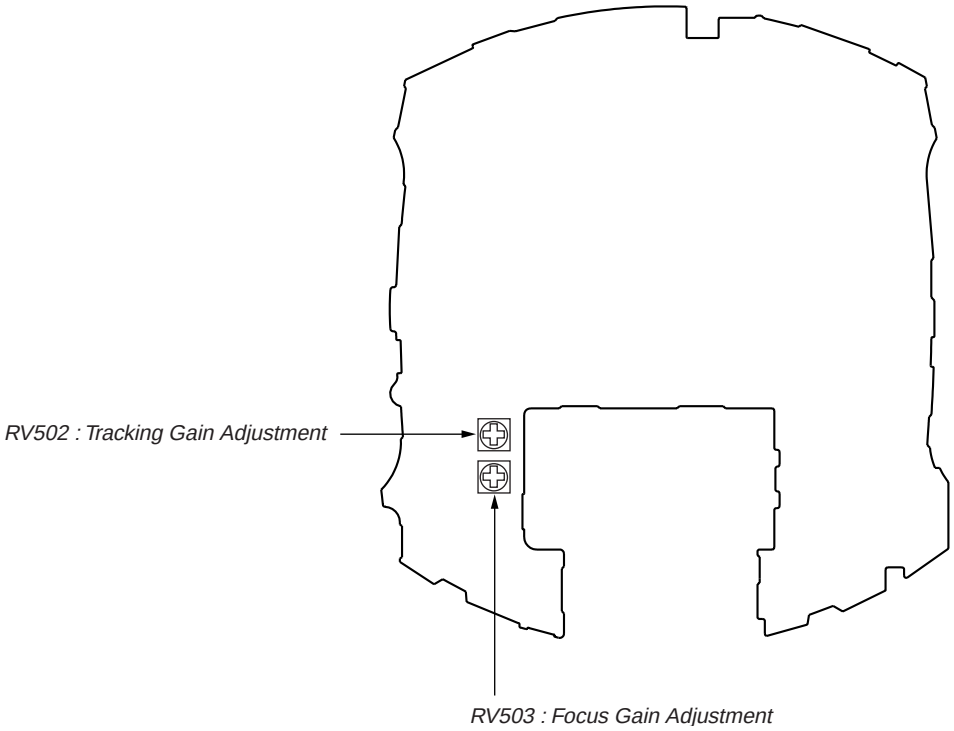


Fig. 5-4

Adjustment Location :

MAIN BOARD] (Side A)



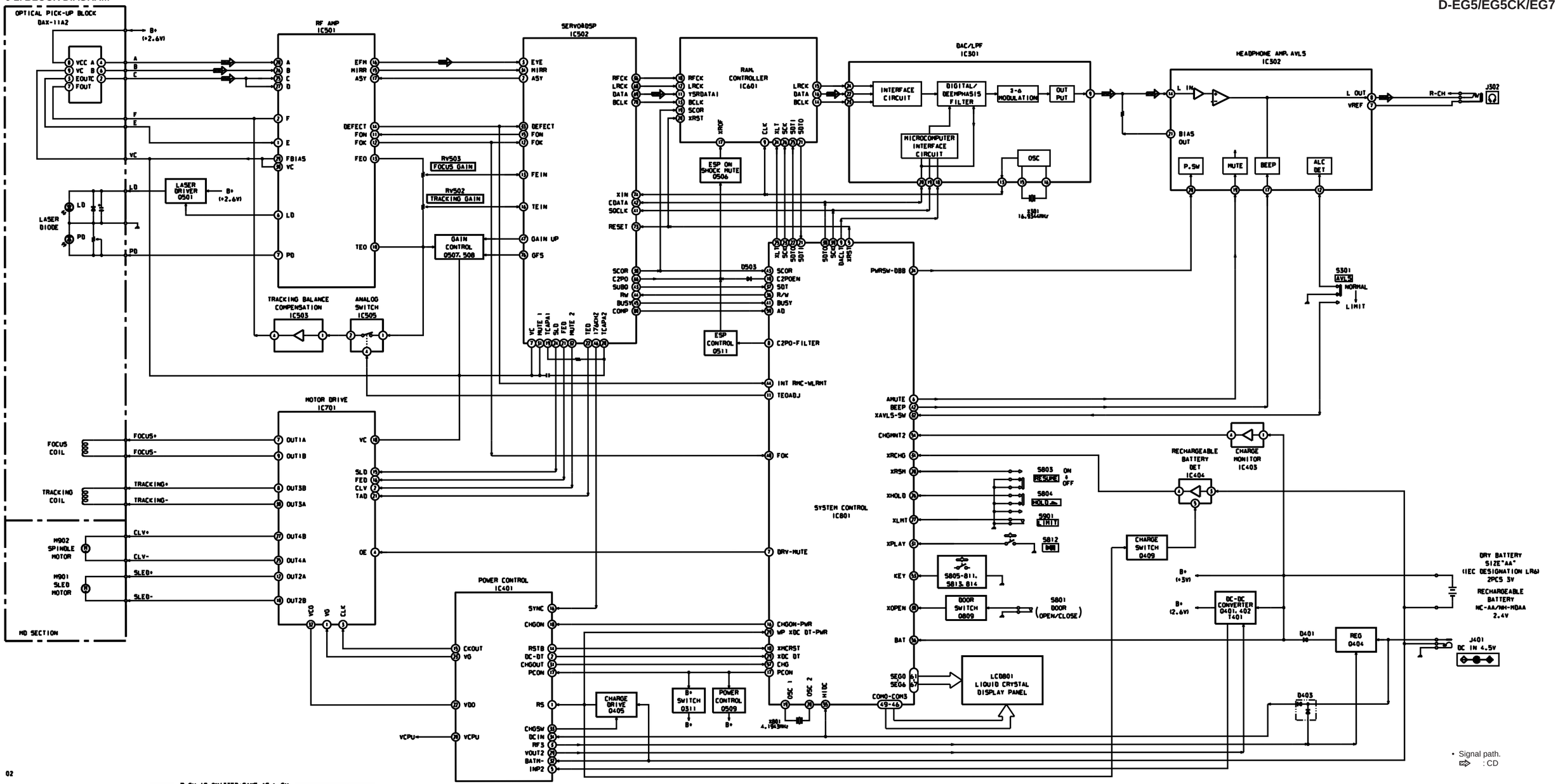
SECTION 6
DIAGRAMS

6-1. EXPLANATION OF IC TERMINALS

IC801 MC68HC05L15SC442721CPB (SYSTEM CONTROL)

Pin No.	Pin name	I/O	Description
1 – 3	SEG 12–14	–	Not used (Open).
4	FP26	–	Not used (Open).
5	XRST– DSP	O	Reset output terminal.
6	AMUTE – HP	O	Audio mute output terminal.
7	DRV-MUTE	O	Motor drive mute signal output.
8	C2PO FILTER	O	C2PO filter output.
9	DACLT–DAC	I/O	CPU serial data input, latch signal output (For DAC only).
10	C2POEN	O	C2PO signal control output. “ L ” : Stop “ H ” : Searching
11	TEOADJ – TEO	O	Tracking ADJ switch control output.
12	RMDAT–WRMT	–	Not used (Open).
13	VLCD (GND)	–	Connect to ground.
14	VSS (GND)	–	Connect to ground.
15	NDLY (GND)	–	Connect to ground.
16	CHGON – PWR	O	Charge ON/OFF control output.
17	PCON–PWR	O	Power ON/OFF control output. “ L ” : ON “ H ” : OFF
18	XMCRST–PWR	I	System reset input terminal.
19	OSC 1	I	System clock oscillator input terminal (4.1943 MHz).
20	OSC 2	O	System clock oscillator output terminal (4.1943 MHz).
21	SDT–ESP	I	Serial data input from ESP control (IC601).
22	SDT–ESP	O	Serial data output to ESP control (IC601).
23	SCK–ESP	O	Serial clock output to ESP control (IC601).
24	PWR – DBB	O	Headphone amplifier ON/OFF control output.
25	XLT–ESP	O	Latch signal output to ESP control (IC601).
26	HOLD–SW	I	Hold switch input termianl. “ L ” : HOLD ON “ H ” : HOLD OFF
27	XLMT–MD	I	Limit switch input terminal. “ L ” : Inside Track
28	XRSM–SW	I	RESUME switch input terminal. “ L ” : ON “ H ” : OFF
29	WP XDC–DT PWR	I	DC in voltage detection terminal.
30	WP XOPEN–SW	I	Door open switch input terminal. “ L ” : Close “ H ” : Open
31	WP XPLAY–SW	I	Play/pause key input terminal.
32	XAVLS–SW	I	AVLS switch input terminal.
33	XL/O DCT	I	LINE OUT jack detection terminal. “ L ” : Present “ H ” : No
34	XRCHG–SW	I	Rechargeable battery detection terminal. “ L ” : Present “ H ” : No
35	————	–	Not used (Open).
36	R/W DSP	O	Read/Write switching signal output terminal. “ L ” : Read “ H ” : Write
37	SDT–DSP	I	SUB–Q signal input terminal.
38	SDT–DSP	O	Serial data output to DSP (IC502) and D/A C (IC301).
39	SCK–DSP	O	Clock signal to enter SUB–Q signal to DSP (IC502) and D/A C (IC301).
40	FOK–RF	I	FOK signal input terminal.
41	BUSY–DSP	I	BUSY signal input terminal from DSP (IC502).
42	BEEP–H/P	O	Beep sound output terminal.
43	INT SCOR–DSP	I	Sub code sync SO+SI input terminal.
44	INT DFCT RF	I	Wireless remote control signal input.
45	VDD (VCPU)	–	Power supply terminal.

Pin No.	Pin name	I/O	Description
46 – 49	COM 3–0	O	LCD common signal output terminal.
50	VREFH	I	Reference voltage input terminal (connect to VDD).
51	VREFL	–	Connect to ground.
52	AD ESPSL/TEST	I	Test mode terminal. “ L ” : Test mode “ H ” : Nomal mode
53	AD–KEY	I	A/D input terminal for main unit key.
54	AD–CHGMNT2	I	Rechargeable battery detect input.
55	AD–HI DC	I	A/D input terminal for DC IN voltage detection.
56	AD – BAT	I	Rechargeable battery/dry cell detection input.
57	AD – CHGMNT	I	A/D input terminal for charging voltage monitor.
58	AD – VCC	I	A/D input terminal for VCC voltage monitor.
59	AD – DSP OFFSET	I	A/D input terminal for DSP off-set monitor.
60	FP10	–	Not used (Open).
61 – 67	SEG 0 – 6	O	LCD segment signal output terminal.
68 – 72	SEG 7 – 11	–	Not used (Open).


OPTICAL PICK-UP BLOCK
DAX-11A2
B+ (+2.6V)
VCC A
VC B
EOUTC
FOUT
A
B
C
F
E
VC
LD
PD
LASER DIODE
LASER DRIVER 0501
B+ (+2.6V)
RF AMP IC501
EFM
MIRR
ASY
DEFECT
FON
FOK
FEO
TEO
RV503 FOCUS GAIN
RV502 TRACKING GAIN
GAIN CONTROL 0507, 508
FBIAS
VC
LD
PD
FEIN
TEIN
GAIN UP
GFS
SERVODSP IC502
EYE
MIRR
ASY
DEFECT
FON
FOK
RFCK
LRCK
DATA
BCLK
SCOR
XRST
XIN
CDATA
SCLK
RESET
C2PO
SUBQ
RW
BUSY
COMP
XROF
CLK
XLT
SCK
SDTI
SDTO
RAM CONTROLLER IC601
YSRDATA1
ESP ON SHOCK MUTE 0506
ESP CONTROL 0511
D503
SCOR
C2POEN
SDT
R/W
BUSY
AD
C2PO-FILTER
INT RMC-WLRMT
TEOADJ
FOK
DRV-MUTE
TRACKING BALANCE COMPENSATION IC503
ANALOG SWITCH IC505
VC
MUTE 1
TCBAL1
SLD
FEO
MUTE 2
TEO
176KHZ
TCAPA2
MOTOR DRIVE IC701
FOCUS COIL
FOCUS+
FOCUS-
TRACKING COIL
TRACKING+
TRACKING-
M902 SPINDLE MOTOR
CLV+
CLV-
M901 SLED MOTOR
SLED+
SLED-
OUT1A
OUT1B
OUT3B
OUT3A
OUT4B
OUT4A
OUT2A
OUT2B
VC
SLD
FEO
CLV
TAD
OE
VCO
VG
CLK
POWER CONTROL IC401
SYNC
CHGON
RSTB
DC-DT
CHGOUT
PCON
RS
CHDSW
DCIN
RFS
VOUT2
BATN-
INP2
CKOUT
VG
VDD
VCPU
CHARGE DRIVE 0405
B+ SWITCH 0311
POWER CONTROL 0509
OSC 1
OSC 2
HIDC
X401 4.19MHz
CHGON-PWR
WP XDC DT-PWR
XMCRST
XDC DT
CHG
PCON
SYSTEM CONTROL IC801
PWRSW-DBB
AMUTE
BEEP
XAVLS-SW
CHGMNT2
XRCHG
XRSW
XHOLD
XLMT
XPLAY
KEY
XOPEN
BAT
SEG0-SEG5
COM0-COM3
49-46
LCD801 LIQUID CRYSTAL DISPLAY PANEL
S803 RESUME ON & OFF
S804 HOLD
S901 LIMIT
S812 DBB
S805-811, S813, 814
DOOR SWITCH 0809
S801 DOOR (OPEN/CLOSE)
CHARGE SWITCH 0409
RECHARGEABLE BATTERY DET IC404
CHARGE MONITOR IC403
DAC/LPF IC501
INTERFACE CIRCUIT
DIGITAL/ DEEMPHASIS FILTER
3-α MODULATION
OUT PUT
MICROCOMPUTER INTERFACE CIRCUIT
OSC
X301 16.934MHz
HEADPHONE AMP AVLS IC502
L IN
BIAS OUT
L OUT
VREF
R-CH
J302
P.SW
MUTE
BEEP
ALC DET
S301 AVLS NORMAL LIMIT
DC-DC CONVERTER 0401, 402 T401
B+ (+3V)
B+ (2.6V)
D401
REG 0404
D403
DRY BATTERY SIZE "AA" (IEC DESIGNATION LR6) 2PCS 3V
RECHARGEABLE BATTERY NC-AA/NH-MDAA 2.4V
J401 DC IN 4.5V
HD SECTION
02
R-CH IS OMITTED:SAME AS L-CH
• Signal path.
⇨ : CD

6-3. PRINTED WIRING BOARDS

- **Semiconductor Location**

Ref. No.	Location
D101	E-10
D201	E-10
D302	E-10
D401	B-7
D402	A-12
D403	B-10
D407	D-12
D416	C-11
D417	C-12
D503	C-17
D602	E-13
IC301	E-7
IC302	F-7
IC401	D-11
IC403	F-5
IC404	F-6
IC501	G-2
IC502	C-16
IC503	C-17
IC505	D-17
IC601	E-13
IC701	C-13
IC801	F-16
Q311	D-8
Q401	B-12
Q402	A-12
Q404	C-8
Q405	C-11
Q409	F-6
Q501	G-16
Q506	B-17
Q507	D-16
Q508	D-16
Q509	B-12
Q511	B-17
Q809	G-8

Note:
- ○——— : parts extracted from the component side.
- ○ : Through hole.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:

Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

[MAINBOARD] (SIDE A)

OPTICAL PICK-UP BLOCK DAX-11A2

M901 SLED MOTOR

S901 (LIMIT SW)

M902 SPINDLE MOTOR

S804 HOLD OFF→ON

[MAINBOARD] (SIDE B)

J401 DC IN 4.5V

S803 RESUME ON←OFF

S301 AVLS LIMIT←NORM

S801 (OPEN SW)

J302

EXCEPT FRENCH MODEL

FRENCH MODEL

DRY BATTERY SIZE "AA" (IEC DESIGNATION LR6) 2PCS, 3V

RECHAGEABLE BATTERY NC-AA/NH-MDAA 2.4V

TP816 (TEST) NORMAL MODE:OPEN TEST MODE:SHORT

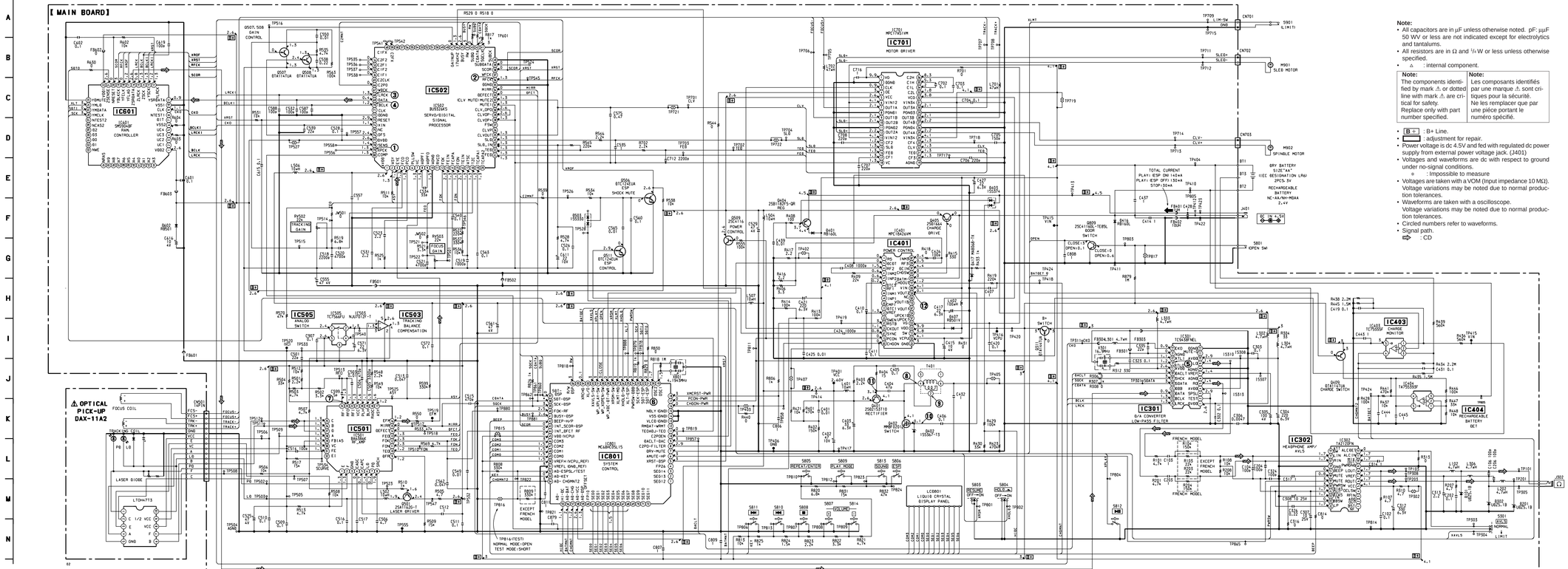
EXCEPT FRENCH MODEL

S805 REPEAT/ ENTER

S806 ESP

S807 VOLUME

S813 SOUND



Note:
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.

Note:	Note:
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line.
- : adjustment for repair.
- Power voltage is dc 4.5V and fed with regulated dc power supply from internal power voltage jack. (J401)
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

● **Waveforms**

① SERVICE MODE during TRK servo OFF
IC502 ⑰ (XPCK) — 4.2 MHz, 2.4 Vp-p, VOLT/DIV : 1 V AC, TIME/DIV : 0.2 µsec

② IC502 ㉔ (RFCK) — 130 µsec, 2.9 Vp-p, VOLT/DIV : 1 V AC, TIME/DIV : 50 µsec

③ IC502 ㉖ (LRCK) — 22.7 µsec, 2.9 Vp-p, VOLT/DIV : 1 V AC, TIME/DIV : 10 µsec

④ IC502 ⑲ (BCLK) — 0.47 µsec, 2.5 Vp-p, VOLT/DIV : 1 V AC, TIME/DIV : 0.2 µsec

⑤ IC301 ⑭ (XTLO) — 16.9 MHz, 2.6 Vp-p, VOLT/DIV : 1 V AC, TIME/DIV : 50 nsec

⑥ IC801 ㉚ (OSC2) — 4.19 MHz, 3.0 Vp-p, VOLT/DIV : 1 V AC, TIME/DIV : 0.2 µsec

⑦ PLAY MODE
IC501 ㉒ (RFO) — 0.6–1.2 Vp-p, VOLT/DIV : 0.2 V AC, TIME/DIV : 0.5 msec

⑧ T401 ④ — 5.8 µsec, 4.1 Vp-p, VOLT/DIV : 1 V AC, TIME/DIV : 2 µsec

⑨ T401 ② — 5.8 µsec, 9.0 Vp-p, VOLT/DIV : 2 V AC, TIME/DIV : 2 µsec

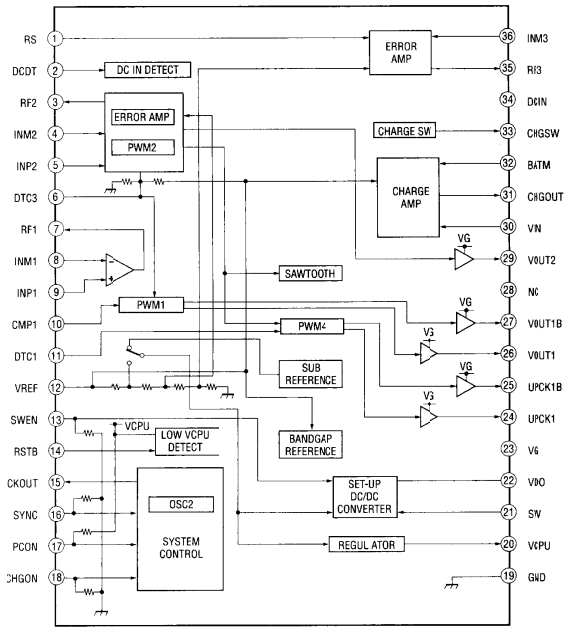
⑩ Q402 GATE — 5.8 µsec, 5.1 Vp-p, VOLT/DIV : 2 V AC, TIME/DIV : 2 µsec

⑪ Q401 BASE — 5.8 µsec, 9 Vp-p, VOLT/DIV : 2 V AC, TIME/DIV : 2 µsec

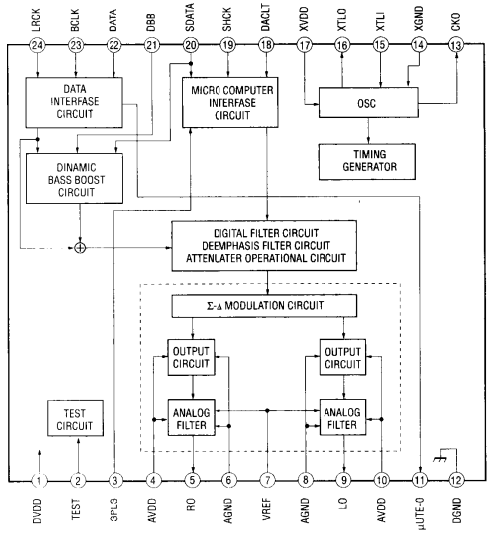
⑫ IC401 ㉘ (VOUT2) — 5.8 µsec, 5.3 Vp-p, VOLT/DIV : 2 V AC, TIME/DIV : 2 µsec

• IC Block Diagrams

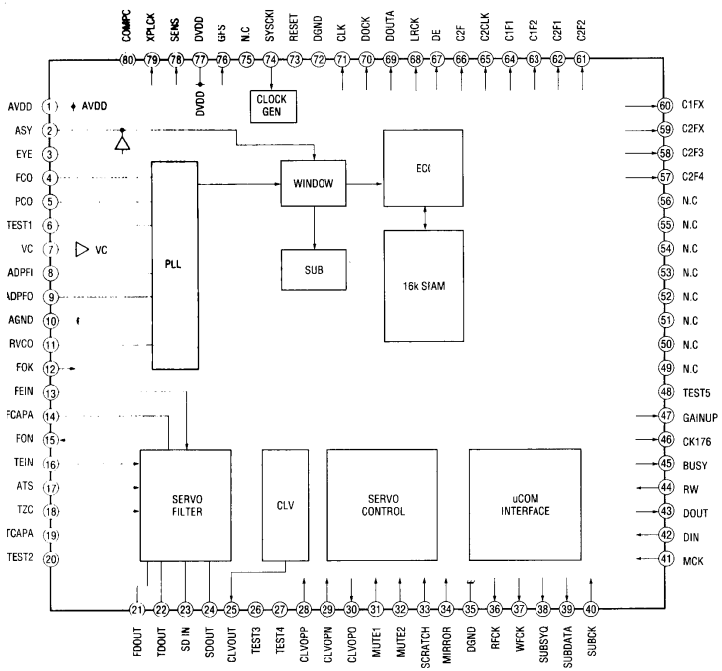
IC401 MPC18A26VMEL



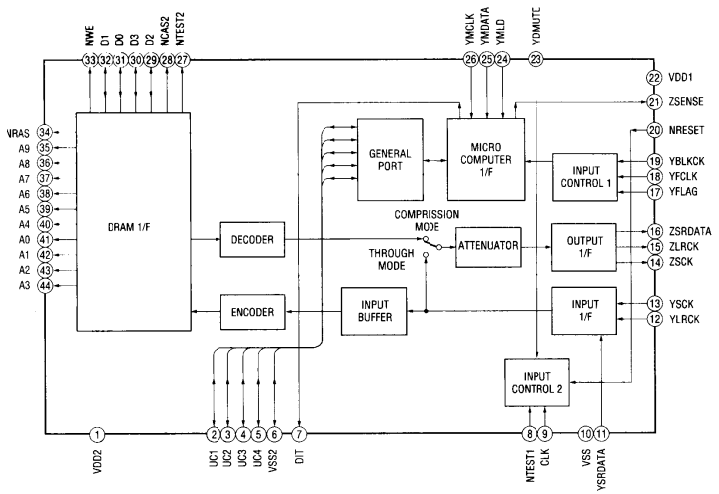
IC301 TC9438FNEL



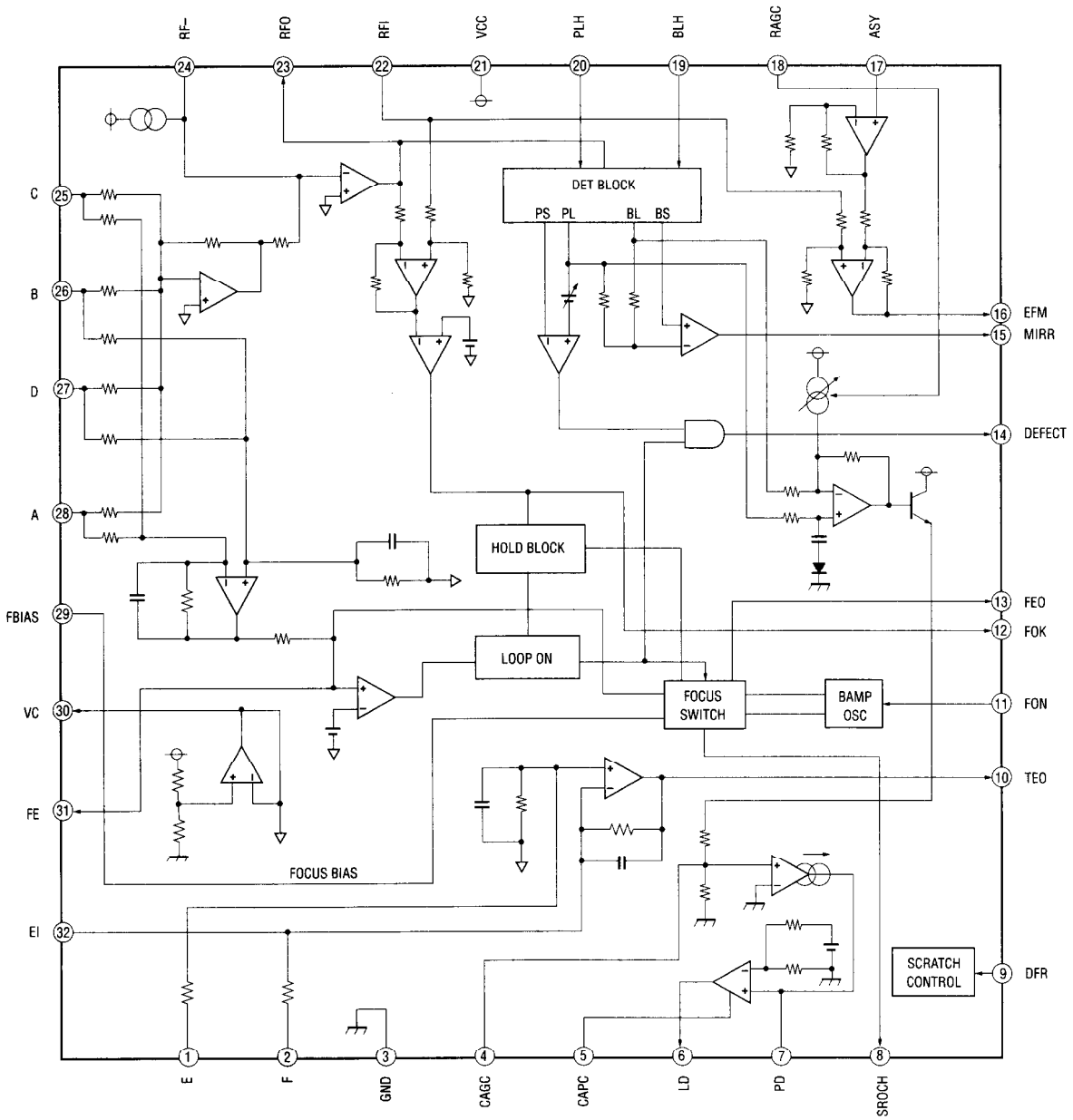
IC502 BU9326KS



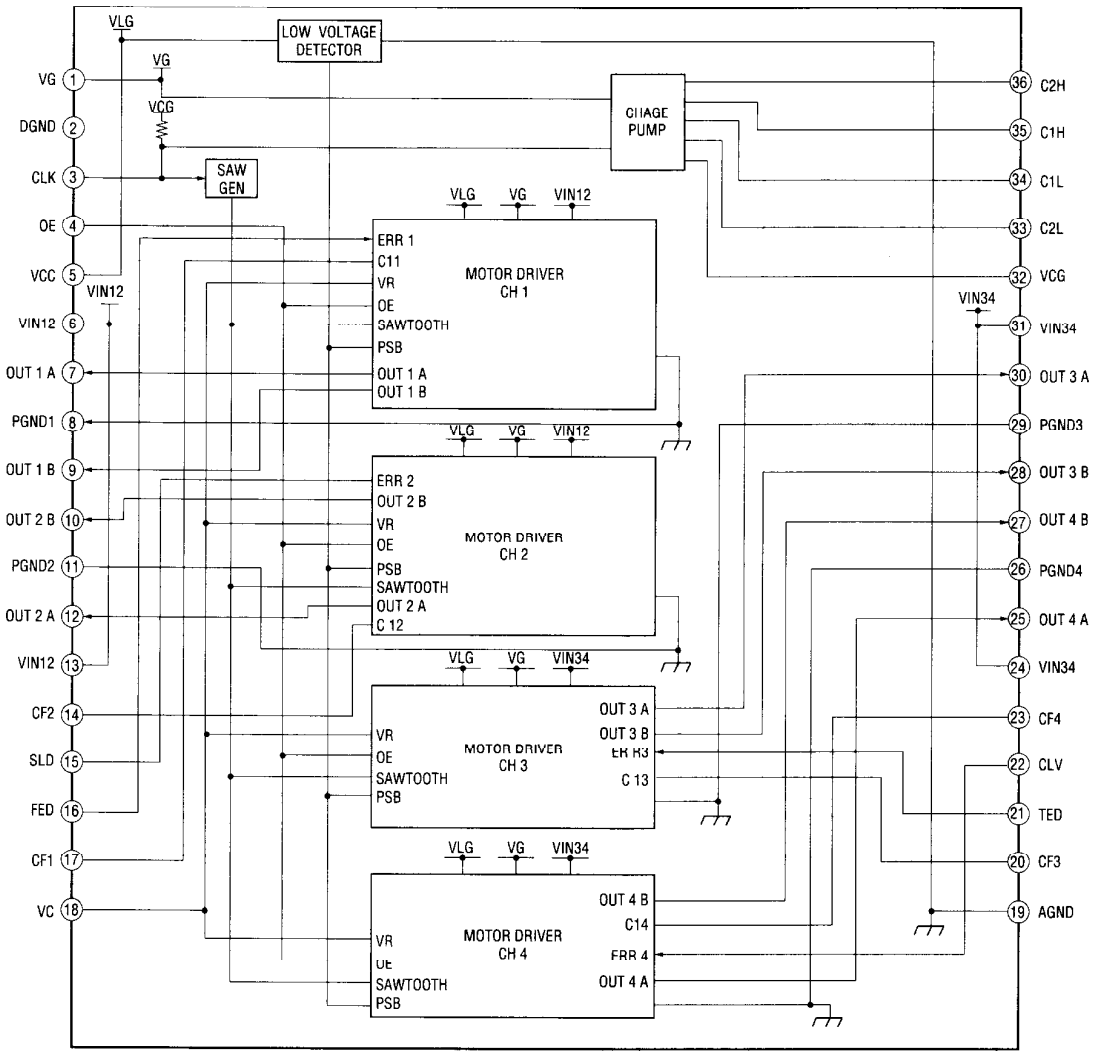
C601 SM5904BF



IC501 BA6386K



IC701 MPC17A51VMEL



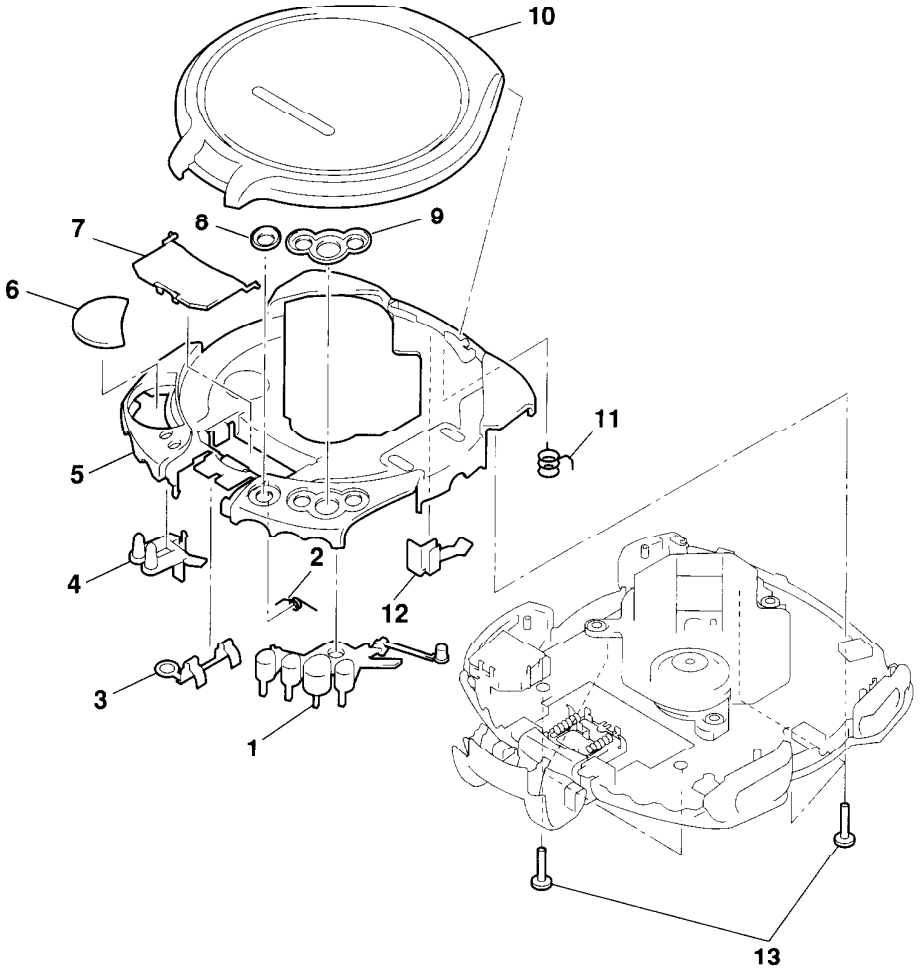
SECTION 7
EXPLODED VIEWS

NOTE :
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ••• (RED)
  ↑ ↑
  Parts color Cabinet's color
  BLACK : Use red bracket
  CANADIAN BLACK : Use blue bracket
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.
- Abbreviation
  FR : French

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

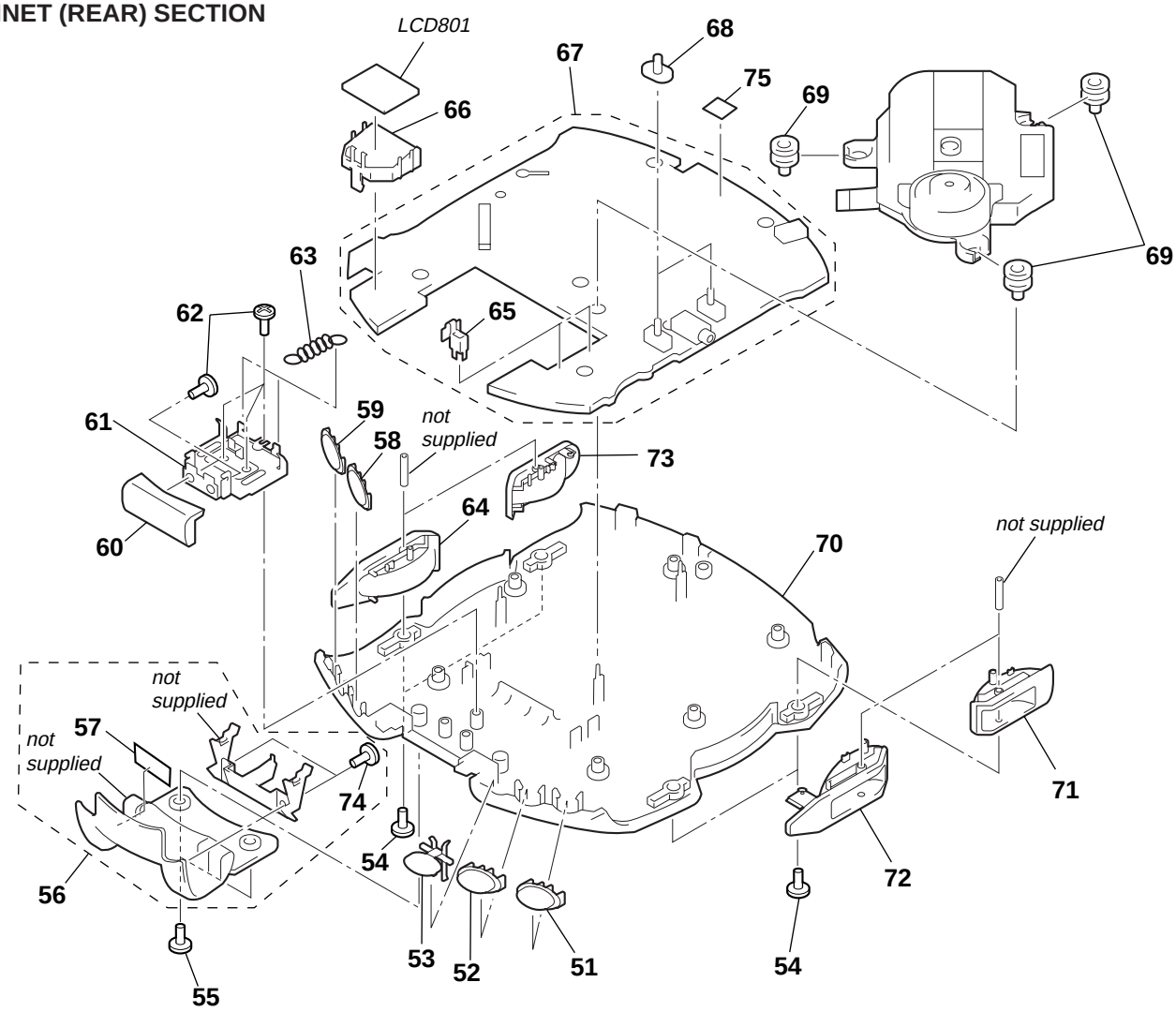
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

7-1. CABINET (FRONT) SECTION



Ref. No.	Part No.	Description	Remark
1	4-215-416-01	BUTTON (OPR) (CANADIAN BLACK)	(EG5,EG5CK)
1	4-215-416-11	BUTTON (OPR) (BLACK) (EG7)	
1	4-215-416-21	BUTTON (OPR) (WHITE) (EG5,EG7)	
2	4-216-213-01	SPRING (BUCKLE)	
3	4-220-395-01	TERMINAL BOARD (RELAY),BATTERY	
4	4-215-417-11	BUTTON (PLAY MODE)	(BLACK, CANADIAN BLACK)
4	4-215-417-21	BUTTON (PLAY MODE) (WHITE)	
5	4-215-411-01	CABINET (FRONT) (CANADIAN BLACK)	(EG5,EG5CK)
5	4-215-411-11	CABINET (FRONT) (BLACK) (EG7)	
5	4-215-411-21	CABINET (FRONT) (WHITE) (EG5,EG7)	
6	4-215-414-01	WINDOW (LCD)	
7	4-215-415-11	LID, BATTERY CASE	(BLACK, CANADIAN BLACK)
7	4-215-415-21	LID, BATTERY CASE (WHITE)	
8	4-215-425-11	BUTTON (STOP), RING	(BLACK, CANADIAN BLACK)
8	4-215-425-21	BUTTON (STOP), RING (WHITE)	
9	4-215-426-11	BUTTON (PLAY), RING	(BLACK, CANADIAN BLACK)
9	4-215-426-21	BUTTON (PLAY), RING (WHITE)	
10	A-3328-167-A	UPPER LID ASSY (CANADIAN BLACK)(EG5CK)	
10	A-3328-168-A	UPPER LID ASSY (CANADIAN BLACK)(EG5)	
10	A-3328-169-A	UPPER LID ASSY (WHITE) (EG5)	
10	A-3328-180-A	UPPER LID ASSY (BLACK) (EG7)	
10	A-3328-181-A	UPPER LID ASSY (WHITE) (EG7)	
11	4-215-437-01	SPRING (UPPER LID)	
12	4-215-436-01	PLATE, STOP	
13	3-336-395-01	SCREW (B2X10) (G), TAPPING	(BLACK, CANADIAN BLACK)
13	7-621-255-65	SCREW (B2X10) (G), TAPPING (WHITE)	

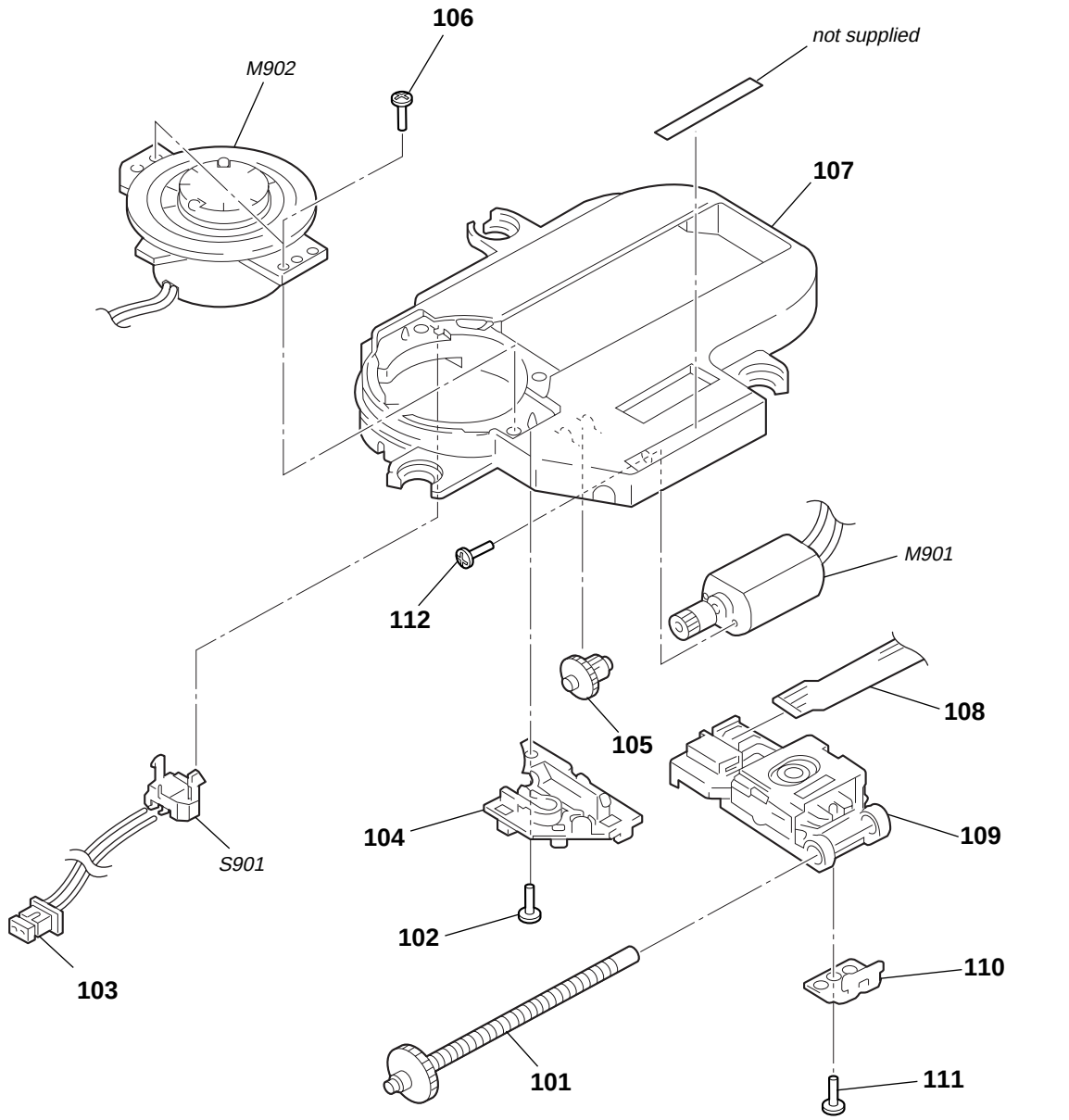
7-2. CABINET (REAR) SECTION



Ref. No.	Part No.	Description	Remark
51	4-215-418-11	BUTTON (VOL) (+) (BLACK, CANADIAN BLACK)	
51	4-215-418-21	BUTTON (VOL) (+) (WHITE)	
52	4-215-419-11	BUTTON (VOL) (-) (BLACK, CANADIAN BLACK)	
52	4-215-419-21	BUTTON (VOL) (-) (WHITE)	
53	4-215-422-11	KNOB (HOLD) (BLACK, CANADIAN BLACK)	
53	4-215-422-21	KNOB (HOLD) (WHITE)	
54	4-908-792-41	SCREW (B2) (WHITE)	
54	4-908-792-51	SCREW (B2) (BLACK, CANADIAN BLACK)	
55	4-908-792-41	SCREW (B2)	
56	X-4951-400-1	BUCKLE ASSY	
57	4-219-052-01	SHEET, RUBBER	
58	4-215-420-11	BUTTON (SOUND) (BLACK, CANADIAN BLACK)	
58	4-215-420-21	BUTTON (SOUND) (WHITE)	
59	4-215-421-11	BUTTON (ESP) (BLACK, CANADIAN BLACK)	
59	4-215-421-21	BUTTON (ESP) (WHITE)	
60	4-215-424-01	BUTTON (OPEN)	
61	X-4951-382-1	PLATE SUB ASSY	
62	4-908-792-21	SCREW (B2)	
63	4-216-214-01	SPRING, TENSION	
64	A-3328-319-A	BRACKET FRONT (L) ASSY(CANADIAN BLACK)	
64	A-3328-320-A	BRACKET FRONT (L) ASSY (BLACK)	

Ref. No.	Part No.	Description	Remark
64	A-3328-321-A	BRACKET FRONT (L) ASSY (WHITE)	
65	4-215-434-01	TERMINAL, BATTERY	
66	4-215-433-01	HOLDER (LCD)	
67	A-3323-223-A	MAIN BOARD, COMPLETE (EXCEPT FR)	
67	A-3323-224-A	MAIN BOARD, COMPLETE (FR)	
68	4-215-423-11	KNOB (AVLS) (BLACK, CANADIAN BLACK)	
68	4-215-423-21	KNOB (AVLS) (WHITE)	
69	4-993-138-01	INSULATOR	
70	4-215-412-11	CABINET (REAR) (BLACK, CANADIAN BLACK)	
70	4-215-412-21	CABINET (REAR) (WHITE)	
71	A-3328-313-A	BRACKET REAR (L) ASSY (CANADIAN BLACK)	
71	A-3328-314-A	BRACKET REAR (L) ASSY (BLACK)	
71	A-3328-315-A	BRACKET REAR (L) ASSY (WHITE)	
72	A-3328-323-A	BRACKET FRONT (R) ASSY (CANADIAN BLACK)	
72	A-3328-324-A	BRACKET FRONT (R) ASSY (BLACK)	
72	A-3328-325-A	BRACKET FRONT (R) ASSY (WHITE)	
73	A-3328-317-A	BRACKET REAR (R) ASSY (CANADIAN BLACK)	
73	A-3328-318-A	BRACKET REAR (R) ASSY (BLACK)	
73	A-3328-326-A	BRACKET REAR (R) ASSY (WHITE)	
74	7-627-553-27	SCREW,PRECISION +P 2X2.5	
75	4-220-396-01	SHEET, STOPPER	
LCD801	1-803-351-11	DISPLAY PANEL, LCD	

7-3. OPTICAL PICK-UP SECTION (CDM-2911AAA)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	A-3303-970-A	SCREW ASSY, FEED	
102	3-318-203-11	SCREW (B1.7X6), TAPPING	
103	1-690-530-81	LEAD (WITH CONNECTOR)	
104	4-972-163-04	SPRING, SLED	
105	4-974-003-01	GEAR (B)	
106	3-719-401-11	SCREW (B1.7), TAPPING	
* 107	4-984-320-01	CHASSIS	
108	1-660-965-11	SLIDE FLEXIBLE BOARD	
⚠109	X-4951-546-1	OPTICAL PICK-UP (DAX-11A2)	
110	4-972-165-01	RACK	
111	4-973-631-01	SCREW	
112	7-627-850-17	SCREW,PRECISION +P 1.4X2.5	
M901	A-3303-403-A	MOTOR ASSY, SLED (SLED) (INCLUDING GEAR)	
M902	A-3328-261-A	MOTOR ASSY, TURNTABLE (SPINDLE)	
S901	1-571-099-21	SWITCH (1 KEY) (LIMIT)	

SECTION 8
ELECTRICAL PARTS LIST

MAIN

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ , for example :
  uA.... : µ A.... , uPA.... : µ PA....
  uPB.... : µ PB.... , uPC.... : µ PC....
  uPD.... : µ PD....
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  CND : Canadian
  FR : French
  G : German
  EE : East European

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-3323-223-A	MAIN BOARD, COMPLETE (EXCEPT FR)			
	A-3323-224-A	MAIN BOARD, COMPLETE (FR)			
		**********			
	4-215-433-01	HOLDER (LCD)			
		< BATTERY TERMINAL >			
BT1	4-215-434-01	TERMINAL, BATTERY			
BT2	4-215-434-01	TERMINAL, BATTERY			
		< CAPACITOR >			
C102	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C103	1-115-156-11	CERAMIC CHIP	1uF		10V
C104	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C106	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C202	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C203	1-115-156-11	CERAMIC CHIP	1uF		10V
C204	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C206	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C302	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C303	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C304	1-124-635-00	ELECT	220uF	20%	6.3V
C305	1-124-584-00	ELECT	100uF	20%	10V
C306	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C307	1-126-795-11	ELECT	10uF	20%	25V
C308	1-126-795-11	ELECT	10uF	20%	25V
C312	1-128-057-11	ELECT	330uF	20%	6.3V
C313	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C314	1-115-156-11	CERAMIC CHIP	1uF		10V
C316	1-216-864-11	METAL CHIP	0		
C317	1-115-156-11	CERAMIC CHIP	1uF		10V
C323	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C324	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C326	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C335	1-162-910-11	CERAMIC CHIP	5PF	5%	50V
C401	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C402	1-126-785-11	ELECT	47uF	20%	10V
C403	1-127-485-00	ELECT	33uF	20%	6.3V
C404	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C405	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C406	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C407	1-115-156-11	CERAMIC CHIP	1uF		10V
C408	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C410	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C411	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C414	1-115-156-11	CERAMIC CHIP	1uF		10V
C415	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C417	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C419	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C420	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C421	1-124-635-00	ELECT	220uF	20%	6.3V
C424	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C425	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C426	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C427	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C428	1-115-156-11	CERAMIC CHIP	1uF		10V
C431	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C432	1-115-156-11	CERAMIC CHIP	1uF		10V
C437	1-115-156-11	CERAMIC CHIP	1uF		10V
C439	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C443	1-115-156-11	CERAMIC CHIP	1uF		10V
C444	1-115-156-11	CERAMIC CHIP	1uF		10V
C445	1-115-156-11	CERAMIC CHIP	1uF		10V
C501	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C504	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C505	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C506	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C509	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C510	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C511	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C512	1-115-156-11	CERAMIC CHIP	1uF		10V
C513	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C514	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C515	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C516	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C517	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C518	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C519	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C520	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C521	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C523	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V
C525	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C526	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C528	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C529	1-126-513-11	ELECT	47uF	20%	4V

MAIN

Ref. No.	Part No.	Description			Remark
C531	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V
C532	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C534	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C535	1-115-156-11	CERAMIC CHIP	1uF		10V
C538	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C539	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C540	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C549	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C550	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C555	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C557	1-115-156-11	CERAMIC CHIP	1uF		10V
C560	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C561	1-126-513-11	ELECT	47uF	20%	4V
C562	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C563	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C565	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C571	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C572	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C575	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C587	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C588	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C599	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C601	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C602	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C611	1-126-514-11	ELECT	22uF	20%	10V
C615	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C616	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C619	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C702	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C703	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C704	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C705	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C706	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C707	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C708	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C712	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C716	1-164-346-11	CERAMIC CHIP	1uF		16V
C806	1-115-156-11	CERAMIC CHIP	1uF		10V
C807	1-115-156-11	CERAMIC CHIP	1uF		10V
C808	1-115-156-11	CERAMIC CHIP	1uF		10V
C809	1-115-156-11	CERAMIC CHIP	1uF		10V
C811	1-115-156-11	CERAMIC CHIP	1uF		10V
C879	1-115-156-11	CERAMIC CHIP	1uF		10V
C907	1-164-360-11	CERAMIC CHIP	0.1uF		16V
		< CONNECTOR >			
CN501	1-566-530-11	CONNECTOR, FPC (ZIF) 14P			
* CN701	1-695-320-51	PIN, CONNECTOR (1.5MM)(SMD) 2P			
* CN702	1-695-320-31	PIN, CONNECTOR (1.5MM)(SMD) 2P			
CN703	1-695-320-21	PIN, CONNECTOR (1.5MM)(SMD) 2P			
		< DIODE >			
D101	8-719-976-99	DIODE UDZ-TE-17-5.1B			
D201	8-719-976-99	DIODE UDZ-TE-17-5.1B			
D302	8-719-976-99	DIODE UDZ-TE-17-5.1B			
D401	8-719-048-98	DIODE RB160L-40TE25			
D402	8-719-049-09	DIODE 1SS367-T3SONY			
D403	8-719-049-10	DIODE 1SS374-TE85L			

Ref. No.	Part No.	Description	Remark
D407	8-719-058-24	DIODE RB501V-40TE-17	
D416	8-719-048-98	DIODE RB160L-40TE25	
D417	8-719-017-58	DIODE MA8068-TX	
D503	8-719-024-81	DIODE 1SS300-TE85L	
D602	8-719-058-24	DIODE RB501V-40TE-17	
		< FERRITE BEAD >	
FB301	1-500-444-11	FERRITE	
FB303	1-500-445-21	FERRITE	
FB304	1-500-444-11	FERRITE	
FB401	1-412-026-11	INDUCTOR CHIP 1uH	
FB402	1-412-026-11	INDUCTOR CHIP 1uH	
FB501	1-500-444-11	FERRITE	
FB502	1-500-444-11	FERRITE	
FB601	1-500-444-11	FERRITE	
FB602	1-216-864-11	METAL CHIP 0	
FB603	1-500-445-21	FERRITE	
		< IC >	
IC301	8-759-483-60	IC TC9438FNEL	
IC302	8-759-522-87	IC TA2120FN(EL)	
IC401	8-759-483-61	IC MPC18A26VMEL	
IC403	8-759-387-31	IC TC75S55F	
IC404	8-759-075-70	IC TA75S393F-TE85R	
IC501	8-759-432-83	IC BA6386K	
IC502	8-759-563-54	IC BU9326KS	
IC503	8-759-528-79	IC NJU7012F-TE2	
IC505	8-759-082-60	IC TC7S66FU-TE85L	
IC601	8-759-581-78	IC SM5904BF	
IC701	8-759-483-62	IC MPC17A51VMEL	
IC801	8-759-579-53	IC MC68HC05L15SC442721CPB	
		< JACK >	
J302	1-774-804-11	JACK (🎧)	
J401	1-778-153-21	JACK,DC (POLARITY UNIFIED TYPE) (DC IN 4.5V)	
		< JUMPER RESISTOR >	
JW501	1-216-295-00	METAL CHIP 0	
JW502	1-216-295-00	METAL CHIP 0	
		< COIL >	
L102	1-414-916-11	FERRITE 4.7uH	
L202	1-414-916-11	FERRITE 4.7uH	
L301	1-469-034-11	INDUCTOR 4.7uH	
L302	1-414-821-11	INDUCTOR 4.7uH	
L303	1-414-821-11	INDUCTOR 4.7uH	
L304	1-414-821-11	INDUCTOR 4.7uH	
L306	1-414-916-11	FERRITE 4.7uH	
L401	1-414-267-11	INDUCTOR 10uH	
L402	1-414-404-11	INDUCTOR 100uH	
L502	1-414-267-11	INDUCTOR 10uH	
L504	1-414-267-11	INDUCTOR 10uH	
L506	1-414-267-11	INDUCTOR 10uH	
L507	1-414-267-11	INDUCTOR 10uH	
L701	1-414-402-11	INDUCTOR 47uH	
L702	1-414-402-11	INDUCTOR 47uH	

Ref. No.	Part No.	Description			Remark
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-803-351-11	DISPLAY PANEL, LCD			
		< TRANSISTOR >			
Q311	8-729-028-92	TRANSISTOR DTA144TUA-T106			
Q401	8-729-044-09	TRANSISTOR 2SD2153T100V			
Q402	8-729-044-10	TRANSISTOR MMBF0201NLT1			
Q404	8-729-921-93	TRANSISTOR 2SB1182F5-QR-TLQR			
Q405	8-729-920-85	TRANSISTOR 2SD1664-T100-QR			
Q409	8-729-028-74	TRANSISTOR DTA114TUA-T106			
Q501	8-729-216-22	TRANSISTOR 2SA1162G-TE85L			
Q506	8-729-029-06	TRANSISTOR DTC124EUA-T106			
Q507	8-729-028-74	TRANSISTOR DTA114TUA-T106			
Q508	8-729-028-74	TRANSISTOR DTA114TUA-T106			
Q509	8-729-231-74	TRANSISTOR 2SC4116GL-TE85L			
Q511	8-729-029-06	TRANSISTOR DTC124EUA-T106			
Q809	8-729-231-74	TRANSISTOR 2SC4116GL-TE85L			
		< RESISTOR >			
R101	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R103	1-216-837-11	METAL CHIP	22K	5%	1/16W (EXCEPT FR)
R104	1-218-899-11	METAL CHIP	150K	0.5%	1/16W (FR)
R107	1-216-793-11	RES,CHIP	4.7	5%	1/16W
R108	1-216-833-91	RES,CHIP	10K	5%	1/16W
R201	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R203	1-216-837-11	METAL CHIP	22K	5%	1/16W (EXCEPT FR)
R204	1-218-899-11	METAL CHIP	150K	0.5%	1/16W (FR)
R207	1-216-793-11	RES,CHIP	4.7	5%	1/16W
R208	1-216-833-91	RES,CHIP	10K	5%	1/16W
R304	1-216-803-11	METAL CHIP	33	5%	1/16W
R306	1-216-864-11	METAL CHIP	0	5%	1/16W
R307	1-216-821-11	METAL CHIP	1K	5%	1/16W
R308	1-216-864-11	METAL CHIP	0	5%	1/16W
R310	1-216-142-00	RES,CHIP	4.7	5%	1/8W
R312	1-216-815-11	METAL CHIP	330	5%	1/16W
R313	1-216-864-11	METAL CHIP	0	5%	1/16W
R401	1-218-911-11	RES,CHIP	470K	0.50%	1/16W
R402	1-218-899-11	RES,CHIP	150K	0.50%	1/16W
R403	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R404	1-216-799-11	METAL CHIP	15	5%	1/16W
R406	1-216-304-11	METAL CHIP	3.3	5%	1/10W
R408	1-216-809-11	METAL CHIP	100	5%	1/16W
R409	1-216-837-11	METAL CHIP	22K	5%	1/16W
R413	1-216-845-11	METAL CHIP	100K	5%	1/16W
R414	1-216-845-11	METAL CHIP	100K	5%	1/16W
R415	1-216-815-11	METAL CHIP	330	5%	1/16W
R416	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R417	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R418	1-216-864-11	METAL CHIP	0	5%	1/16W
R419	1-216-849-11	METAL CHIP	220K	5%	1/16W
R421	1-216-833-91	RES,CHIP	10K	5%	1/16W
R423	1-216-853-11	METAL CHIP	470K	5%	1/16W
R428	1-216-845-11	RES,CHIP	100K	5%	1/16W
R429	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R430	1-218-883-11	RES,CHIP	33K	0.50%	1/16W
R431	1-216-864-11	METAL CHIP	0	5%	1/16W
R433	1-216-821-11	METAL CHIP	1K	5%	1/16W
R434	1-216-861-11	RES,CHIP	2.2M	5%	1/16W
R435	1-220-800-91	RES,CHIP	1.5M	0.5%	1/16W
R436	1-218-913-91	RES,CHIP	560K	0.5%	1/16W
R437	1-216-833-91	RES,CHIP	10K	5%	1/16W
R438	1-216-861-11	RES,CHIP	2.2M	5%	1/16W
R439	1-218-913-91	RES,CHIP	560K	0.5%	1/16W
R440	1-216-864-11	METAL CHIP	0	5%	1/16W
R441	1-216-853-11	RES,CHIP	470K	5%	1/16W
R445	1-220-800-91	RES,CHIP	1.5M	0.5%	1/16W
R446	1-218-895-11	RES,CHIP	100K	0.5%	1/16W
R447	1-218-883-11	RES,CHIP	33K	0.5%	1/16W
R448	1-218-871-11	RES,CHIP	10K	0.5%	1/16W
R501	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R502	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R503	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R504	1-216-839-11	METAL CHIP	33K	5%	1/16W
R505	1-216-142-00	RES,CHIP	4.7	5%	1/8W
R506	1-216-833-91	RES,CHIP	10K	5%	1/16W
R507	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R508	1-216-833-91	RES,CHIP	10K	5%	1/16W
R509	1-216-835-11	METAL CHIP	15K	5%	1/16W
R510	1-216-821-11	METAL CHIP	1K	5%	1/16W
R511	1-216-833-91	RES,CHIP	10K	5%	1/16W
R512	1-216-833-91	RES,CHIP	10K	5%	1/16W
R513	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R517	1-216-835-11	METAL CHIP	15K	5%	1/16W
R518	1-216-864-11	METAL CHIP	0	5%	1/16W
R519	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R521	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R522	1-216-849-11	METAL CHIP	220K	5%	1/16W
R525	1-216-821-11	METAL CHIP	1K	5%	1/16W
R528	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R529	1-216-864-11	METAL CHIP	0	5%	1/16W
R531	1-216-833-91	RES,CHIP	10K	5%	1/16W
R533	1-216-841-11	METAL CHIP	47K	5%	1/16W
R534	1-216-833-91	RES,CHIP	10K	5%	1/16W
R535	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R536	1-216-833-91	RES,CHIP	10K	5%	1/16W
R537	1-216-851-11	METAL CHIP	330K	5%	1/16W
R538	1-216-833-91	RES,CHIP	10K	5%	1/16W
R539	1-216-864-11	METAL CHIP	0	5%	1/16W
R544	1-216-864-11	METAL CHIP	0	5%	1/16W
R545	1-216-849-11	METAL CHIP	220K	5%	1/16W
R546	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R548	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R549	1-216-833-91	RES,CHIP	10K	5%	1/16W
R550	1-216-864-11	METAL CHIP	0	5%	1/16W
R555	1-216-845-11	METAL CHIP	100K	5%	1/16W
R563	1-216-845-11	METAL CHIP	100K	5%	1/16W
R569	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R570	1-216-841-11	METAL CHIP	47K	5%	1/16W
R599	1-216-851-11	METAL CHIP	330K	5%	1/16W
R602	1-216-833-91	RES,CHIP	10K	5%	1/16W
R604	1-216-864-11	METAL CHIP	0	5%	1/16W
R630	1-216-864-11	METAL CHIP	0	5%	1/16W

MAIN

Ref. No.	Part No.	Description			Remark
R701	1-216-864-11	METAL CHIP	0	5%	1/16W
R702	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R806	1-216-821-11	METAL CHIP	1K	5%	1/16W
R808	1-216-851-11	METAL CHIP	330K	5%	1/16W
R809	1-216-851-11	METAL CHIP	330K	5%	1/16W (EXCEPT FR)
R813	1-216-833-91	RES,CHIP	10K	5%	1/16W
R814	1-216-864-11	METAL CHIP	0	5%	1/16W
R817	1-216-821-11	METAL CHIP	1K	5%	1/16W
R818	1-216-857-11	METAL CHIP	1M	5%	1/16W
R819	1-216-821-11	METAL CHIP	1K	5%	1/16W
R820	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R821	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R822	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R823	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R824	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R825	1-216-821-11	METAL CHIP	1K	5%	1/16W
R826	1-216-821-11	METAL CHIP	1K	5%	1/16W
R829	1-216-864-11	METAL CHIP	0	5%	1/16W
R830	1-216-864-11	METAL CHIP	0	5%	1/16W
R831	1-216-835-11	METAL CHIP	15K	5%	1/16W
R832	1-216-841-11	METAL CHIP	47K	5%	1/16W
R879	1-216-857-11	METAL CHIP	1M	5%	1/16W
		< VARIABLE RESISTOR >			
RV502	1-223-587-11	RES, ADJ, CARBON 22K (TRACKING GAIN)			
RV503	1-223-587-11	RES, ADJ, CARBON 22K (FOCUS GAIN)			
		< SWITCH >			
S301	1-553-977-00	SWITCH, SLIDE (AVLS)			
S801	1-762-822-11	SWITCH, PUSH (1 KEY) (OPEN SW)			
S803	1-553-977-00	SWITCH, SLIDE (RESUME)			
S804	1-572-922-11	SWITCH, SLIDE (HOLD ➘)			
S805	1-692-014-11	SWITCH, KEY BOARD (REPEAT/ENTER)			
S806	1-554-088-00	SWITCH, KEY BOARD (ESP)			
S807	1-554-088-00	SWITCH, KEY BOARD (VOLUME +)			
S808	1-692-014-11	SWITCH, KEY BOARD (■)			
S809	1-692-014-11	SWITCH, KEY BOARD (PLAY MODE)			
S810	1-692-014-11	SWITCH, KEY BOARD (I◀◀)			
S811	1-692-014-11	SWITCH, KEY BOARD (▶▶I)			
S812	1-692-014-11	SWITCH, KEY BOARD (▶II)			
S813	1-554-088-00	SWITCH, KEY BOARD (SOUND)			
S814	1-554-088-00	SWITCH, KEY BOARD (VOLUME -)			
		< TRANSFORMER >			
T401	1-475-573-11	TRANSFORMER, DC-DC CONVERTER			
		< VIBRATOR >			
X301	1-760-307-11	VIBRATOR, CERAMIC (16.9MHz)			
X801	1-577-101-11	VIBRATOR, CERAMIC (4.1943MHz)			

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Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
108	1-660-965-11	SLIDE FLEXIBLE BOARD	
103	1-690-530-81	LEAD (WITH CONNECTOR)	
⚠109	X-4951-546-1	OPTICAL PICK-UP (DAX-11A2)	
LCD801	1-803-351-11	DISPLAY PANEL, LCD	
M901	A-3303-403-A	MOTOR ASSY, SLED (SLED) (INCLUDING GEAR)	
M902	A-3328-261-A	MOTOR ASSY, TURNTABLE (SPINDLE)	
S901	1-571-099-21	SWITCH (1 KEY) (LIMIT)	

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		ACCESSORIES & PACKING MATERIALS	
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	1-251-696-11	CONNECTING PACK, CAR (EG5CK)	
⚠	1-467-007-22	ADAPTOR, AC (AC-E455)(EG7:AUS)	
⚠	1-467-009-21	ADAPTOR, AC (AC-E455) (EG5CK, EG5/EG7:US,CND)	
⚠	1-473-115-11	ADAPTOR, AC (AC-E455D)(EG7:UK)	
⚠	1-473-116-35	ADAPTOR, AC (AC-E455D) (EG7:AEP,FR,G,E,EE)	
	1-532-577-00	FUSE, GLASS TUBE (EG5CK)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (EG7:E)	
	1-784-619-11	CORD, CAR BATTERY (EG5CK)	
	3-856-479-11	MANUAL, INSTRUCTION (FRENCH)(EG5CK)	
	3-856-479-21	MANUAL, INSTRUCTION (ENGLISH)(EG5CK)	
	3-866-285-11	MANUAL, INSTRUCTION (SPANISH)(AEP)	
	3-866-285-21	MANUAL, INSTRUCTION (ENGLISH) (EXCEPT G, E)	
	3-866-285-31	MANUAL, INSTRUCTION (FRENCH) (CND, AEP, FR)	
	3-866-285-41	MANUAL, INSTRUCTION (DUTCH)(AEP,EE)	
	3-866-285-51	MANUAL, INSTRUCTION (SWEDISH)(AEP)	
	3-866-285-61	MANUAL, INSTRUCTION (PORTUGUESE)(AEP)	
	3-866-285-71	MANUAL, INSTRUCTION (GERMAN)(AEP,G)	
	3-866-285-81	MANUAL, INSTRUCTION (ITALIAN)(AEP)	
	3-866-285-91	MANUAL, INSTRUCTION (FINNISH)(AEP)	
	3-866-286-11	MANUAL, INSTRUCTION (CHINESE)(E)	
	3-866-286-21	MANUAL, INSTRUCTION (ENGLISH)(E)	
	3-866-287-11	MANUAL, INSTRUCTION (RUSSIAN)(EE)	
	3-866-287-21	MANUAL, INSTRUCTION (POLISH)(EE)	
	3-866-287-31	MANUAL, INSTRUCTION (CZECH)(EE)	
	3-866-287-41	MANUAL, INSTRUCTION (HUNGARIAN)(EE)	
	4-220-240-01	STRAP (BLACK), BELT (EG7)	
	4-220-241-01	STRAP (WHITE), BELT (EG7)	
	4-220-242-01	STRAP, HAND (EG5/EG5CK)	
	8-953-273-95	HEADPHONE MDR-G051LP/B2 SET (EG7)	
	8-953-342-93	HEADPHONE MDR-24/1 SET (EG5/EG5CK)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.